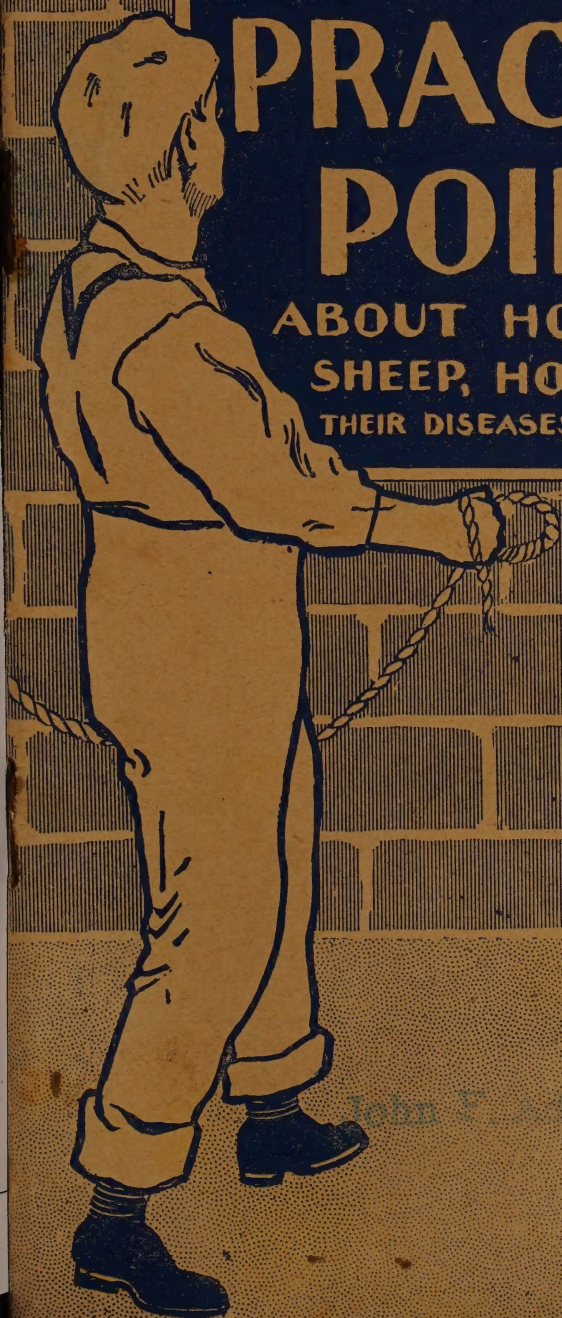


Dr. Hess' PRACTICAL POINTS

ABOUT HORSES, CATTLE,
SHEEP, HOGS ^{AND} POULTRY
THEIR DISEASES AND THEIR TREATMENT.



John F. Hess, M.D.,

Professor of

Large & Medium



STRAIGHT TALK.

Every man who raises stock knows that he must keep his animals in good condition to make money out of them.

Any farmer can easily become acquainted with the symptoms of ordinary diseases in his stock and the best way of curing them.

By consulting this book, "Practical Points," and using it in the way in which it is intended, he can soon put himself in position to attend to all the ordinary ailments of stock.

In doing these things he should bear in mind several things.

One is, stock that is in good condition will resist disease better and when attacked will recover sooner.

To get the best condition for all kinds of live stock use Dr. Hess' Stock Food, the scientific compound.

The theory upon which Dr. Hess' Stock Food is made is a simple, practical and sensible one.

It is absolutely necessary to make good, healthy stock that their food should contain certain elements. These elements are not always found in the grain, hay and other food that is given them, or they are not always found in correct proportions.

Dr. Hess' Stock Food supplies to horses, cows, pigs and sheep the additional elements which are needed to supply them with just the proper food.

This Stock Food is not altogether a medicine, but it is a food that keeps the animals well by supplying them with the proper food in the right proportions. It acts as a tonic and stimulant to the extent of compelling the different organs of their bodies to do their work in the quickest and best

J. K. Rodeman, Sheridan, Ind., says: "I have used Dr. Hess' Stock Food and find it to be as recommended."

possible manner. It enables them to get more nutritive matter out of their food than they would otherwise.

This food is a guaranteed flesh producer. It saves time and feed in preparing stock for market, because it enables every organ to perform its function to appropriate more material from day to day. It saves money because it enables the system to assimilate all the nitrogenous and flesh making material out of the stuff fed. It makes a lazy system do something and allows no food to pass off undigested.

In hog raising it is more important than in any other capacity. Hog cholera is due almost entirely to feeding hogs too much corn. It has already been proven that it is best to feed hogs with a good, balanced ration. Hogs in the corn belt for this reason are most liable to cholera, while in places where they are fed a mixed ration of oats, peas, beans and barley they are practically free from it.

The reason for this is that corn lacks the nutritive elements which are contained in a good ration, and the hogs contract a sickness, which for want of a better term is called hog cholera.

Hogs fed with Dr. Hess' Stock Food will not contract hog cholera. Dr. Hess' Stock Food is equivalent to a balanced ration. It supplies the elements lacking in foods consisting almost entirely of corn.

We do not advertise and sell Dr. Hess' Stock Food as a sure cure for cholera, but feed your hogs with Dr. Hess' Stock Food in proper quantities and disinfect with Instant Louse Killer, and if your hogs die from cholera we will refund every cent you have paid us.

This is as straightforward an offer as any one can make.

Dr. Hess' Poultry Pan-a-ce-a.

Dr. Hess' Poultry Pan-a-ce-a bears the same relation to fowls as the Stock Food does to other domestic animals.

It is intended as a food for poultry which has the additional value of being a medicine. It is different from all other foods and all other medicines. It keeps the fowls well and makes them well when they are sick. It makes them stronger, better able to resist disease, or cures the diseases of fowls, such as gapes, chicken cholera and other ailments of that kind. It increases their laying ability, and especially in

W. L. Berry, New Castle, O., says: "Your preparations are the very acme of perfection, so say my trade."

the moulting season, and in cold weather when the fowls ordinarily do not lay eggs it causes them to lay regularly, thus increasing their profit to you.

It doesn't do this by unnaturally stimulating the fowl, but merely by supplying the necessary elements for producing eggs, and also by keeping the fowl in the best physical health.

In addition to Poultry Pan-a-ce-a, the use of Instant Louse Killer is invaluable as a disinfectant and for keeping fowls free from parasites.

No chickens are entirely free from lice and other vermin.

Your own chickens are probably affected at this moment.

Examine them carefully under the wings and among the fluffy feathers and you will find that this is true.

Instant Louse Killer is a sure cure and preventive not only of lice, but also vermin. It does not stain the plumage or skin, or taint the flesh or eggs. It should be dusted thoroughly into the feathers, nest and roosting places. An excellent way to use it is to sprinkle it with the dust baths.

Instant Louse Killer is especially effective in preventing or destroying sheep ticks.

It is more easily administered and more easily prepared than any sheep dip, and will be just as effective. It can be used in cold weather when a dip would be fatal to sheep. It can and should be used freely about the stalls, sties and other places where farm stock lives, and it will prevent all insect pests characteristic to the different animals, and will also act as the best disinfectant procurable.

This booklet is to advertise Dr. Hess' different preparations. At the same time it is just as accurate as such a book can be made. Although written in 'popular language, the descriptions of various diseases of stock is professional, and technically correct. With this book every farmer and stock raiser can doctor his own stock to good advantage.

In all cases where the disease of the stock presents points which baffle the farmer or which are beyond his diagnosis, we place at his disposal our free bureau of advice.

Advice of this kind is absolutely free to users of the remedies of Dr. Hess & Clark. In each package is placed a card. Dr. Hess will prescribe for your stock free, if you

Naftzger & Co., Orrville, Ohio, says: "After having sold a number of preparations for poultry and many things for louse killers, we have yet to find any thing equal to the preparation put up by Dr. Hess & Clark."

will forward this card, and give the symptoms of the disease or the nature of the injury. Dr. Hess is a practical and thoroughly well-trained veterinarian, and his advice will ordinarily be worth a good deal of money.

If you have any difficulty in obtaining our goods, you can always have your orders filled by sending directly to us.

The prices for Dr. Hess & Clark's Foods and remedies are as follows :

Dr. Hess' Stock Food.

7 lb. Package	\$0.50
12 lb. "	0.75
25 lb. Sack	1.45
50 lb. "	2.85
100 lb. "	5.00
One ton, \$100.00; no more, no less.	

Dr. Hess' Poultry Pan-a-ce-a.

1½ lb. Package	\$0.25
5 lb. "	0.60

Instant Louse Killer.

1 lb. Can	\$0.25
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Notice especially the price of Dr. Hess' Stock Food. You may have used other Stock Foods in the past, and you cannot but be struck by the fact that Dr. Hess' Food is not only better than any other stock food, but it is infinitely cheaper. It is a case where the best costs less than the next best.

Not only is Dr. Hess' Stock Food cheaper per pound, but being perfectly concentrated it requires less to produce good results.

Dr. Hess' Food is a bigger package of better food for less money than you have ever bought before. The pleasure and profits you get out of raising farm stock will be greatly increased by the use of these three standard preparations.

DR. HESS & CLARK.

THE HORSE.

Diseases and Treatment.

The importance of using Dr. Hess' Stock Food in connection with raising horses for any purpose cannot be over-estimated.

In this department is given a selected list of the common ailments of the horse, together with the symptoms and the treatment.

For some of these ailments Dr. Hess' Stock Food is a direct remedy. For nearly all of them it is an indirect one.

There is no case of sickness in which the animal will not be bettered by the regular and constant use of this food. Nor is it to be used for sick horses alone. Every well animal will be kept well and in better condition by using this food regularly than without.

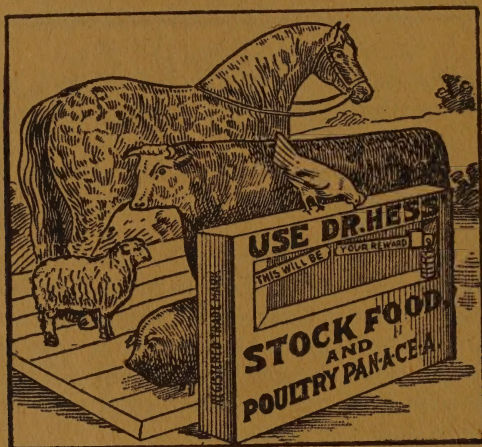
To specify particularly, Dr. Hess' Stock Food cleanses the blood, gently increases the action of the kidneys; regulates the bowels; relieves constipation; removes dropsical swelling of the abdomen and stocking of the legs; overcomes general debility, hide-bound condition and difficult urination. It produces a general tonic effect which insures a smooth, glossy coat, good spirits, prompt action and good staying qualities. It is not a stimulant, but a substantial, reliable, lasting tonic, which can be fed at all times with perfect safety.

Before proceeding directly to this subject, a brief description of the horse is in order.

Description of the Horse.

The digestive tract, or alimentary canal, in the horse of average size is nearly a hundred feet in length. It consists of the entire canal through which the food passes. The mouth, the first portion of this tract, is provided with two

solid columns of teeth, between which columns the food is crushed, and where it also receives moisture and a digestive fluid, from glands which open into this cavity and aid in preparing the food for absorption.



The pharynx is a funnel-shaped cavity which extends between the back or upper part of the mouth and the front and the upper part of the swallow (œsophagus). It is the swelling of the lining of this cavity that causes the great difficulty or inability to swallow in some cases of distemper. The food passes over the end of the trachea (wind pipe) on its way from the mouth to the swallow, but a valve over the trachea prevents any food or water from passing down this tube. The œsophagus is the tube leading from the pharynx to the stomach. It is the smallest where it enters the stomach. This is probably the reason why horses so seldom vomit. Choke is a lodgment of a foreign body in this tube.

The stomach is a dilated portion of the alimentary canal in which the food is retained for digestion of certain parts.

It is small in the horse, its capacity not exceeding twelve quarts. The position is transverse to the animal, and the swallow enters a little to the left of the median line. The lining of the stomach about this opening is white, smooth

Levi Bear, Hagerstown, Md., says: "I find your Stock Food is excellent, and all you claim for it."

and shiny. To the right the lining is rough and vascular and contains the true digestive glands (peptic cells). The



Stomach of a Horse.

opening from the stomach reaches a smaller dilation, the duodenum; from this the gut is of nearly uniform diameter for a distance, when straight, of about seventy feet. In this canal much of the nutritious portion of the food is absorbed as it passes from the stomach to the large intestine. The large intestine is separated from the small by a valve (ileo cæcal). It is also divided into three portions: The cæcum, a blind sac with a capacity of about seven gallons, length three feet. The fluids drank by the animal remain here after passing rapidly through the small intestine and wash the food and prepare it for further absorption in the double colon, which in turn begins by a narrow opening from the cæcum, and has a diameter of from six to ten inches. It is from ten to fifteen feet long, and has a capacity of from eighteen to twenty gallons. The cæcum and colon are frequently the seat of flatulency or bloat in the horse. The double colon ends near its origin (being doubled or looped) by a constriction from whence it is known as the floating colon, nine to twelve feet in length, which in turn ends at the rectum, a dilated and last portion of the gut.

The pulse is due to expansion of the blood vessel, as the blood is forced through it from the heart. In health it is soft and regular and beats from 36 to 44 times a minute, slow in heavy, more rapid in small, nervous horses.

The temperature of the horse in health may be said to be 101 degrees F.; a little less in old animals.

Water for horses should be cool and fresh; stagnant water may cause diarrhœa. If a horse is heated or much exhausted he may have two or three swallows of cold water without danger, but avoid large quantities. Water should be given before feed, else it may carry large quantities of undigested food in its rapid course from the stomach to the colon (see alimentary tract).

Food for horses should not be too concentrated, but should contain some bulky material. Flour or shorts when

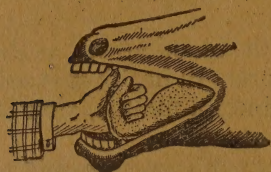
Lote Thistlethwaite, Williamsfield, Ill., says: "I have used all of Dr. Hess & Clark's remedies and find them to be the best I ever used."

fed alone causes indigestion by forming dough through which the digestive fluids cannot penetrate. The addition of coarse bran or cut hay greatly facilitates digestion. A mixed diet is the best and cheapest. Corn alone is a poor diet, but when fed with other cereals is good food. Hay should be clean and sweet. Timothy is considered best, but many prefer a mixture of timothy and clover, and when properly cured it is splendid feed. A great many farmers feed too much hay, which is a waste of this product and a detriment to the animal.

Dr. Hess' Stock Food is a scientific preparation which aids digestion and absorption, aids in the elimination of effete material from the body, and thereby invigorates the blood.

The Teeth.

The full number of teeth in the horse is forty, and thirty-six in the mare, the tusks being absent, or slightly developed in the female. The first twelve molars (three on either side of each jaw) drop off before the animal reaches five years. The caps or crowns of teeth frequently cause trouble in chewing in young animals and should be removed. This can be done



How to examine the Teeth.

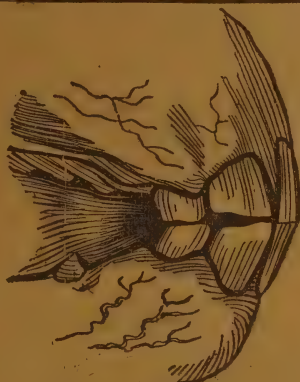
in most cases with any ordinary pair of forceps. In older horses the molars sometimes become uneven, sharp or decayed. The animal shows this by holding the head to one side while eating, quidding the hay, frothing or slavering at the mouth, pulling or lugging at one rein, loss of condition, staring coat, constipation or diarrhoea, and a hide-bound condition will be the result unless relief is afforded.

Treatment.—Examine by placing the horse in a good light, seize the tongue in the left hand, draw gently to one side, place the thumb against the roof of the mouth and the teeth may be plainly viewed; reverse the order to view the other (right) side of the mouth, watch closely for scars on the cheeks or tongue, and if any are found, take your animal to

Geo. Bennett, Jeannette, Pa., says: "I have been using your Stock Food for about a year. I will say that it cannot be excelled."

a veterinary surgeon (not a quack) and he will remove the cause of distress.

*How the Age is shown
by the Teeth.*



Mouth at four years.



Mouth at six years.



Mouth of a very old Horse.

The cuts herewith show the difference in the teeth at different ages. A little study will enable anyone to approximate the age of the animal.

At Three Years Old, the middle teeth above and below come into use. The milk teeth at the sides of these are whiter than permanent teeth.

At Four the next two give place to permanent teeth.

At Five all the milk teeth are replaced by permanent teeth, and the horse has a "full mouth."

At Six the cups are quite well worn out of the crowns of the middle two teeth below.

At Seven they disappear from the next two at the sides of these. The cuts show the mouth at four, six, and extreme old age.

Cut (b) shows tops or crowns of tooth at different places as it appears from wear as the animal advances in age.

Philip Baltz, Millstadt, Ill., says: "I am pleased with your preparations. Your Stock Food is a great seller and is recommended by farmers that have used it."

As we approach the root, the wearing surface of the tooth becomes narrow from side to side, but broad from before backward across its surface, being somewhat triangular in shape, with the dental star nearest the back edge. This condition will be more apparent as age advances.

Stomach Bloat or Tympanitis.

Stomach bloat or tympanitis is a distension of the stomach with gas, due to decomposition or fermentation of the food. It is frequently seen when the animal is put to severe exercise after a full feed of green or indigestible food. Stomach bloat can often be prevented by using Dr. Hess' Stock Food. This preparation prevents fermentation and the formation of gases and improves the digestive powers of the stomach.

Symptoms.—Depression, colicky pains, clammy sweat, tremor and eructation (belching) of gas, rapid, weak pulse, attempts to vomit and protrusion of the nose and upper lip.

How the Age is shown by the Teeth.



Teeth at seven years.



Teeth at twelve years.



Teeth of a very old Horse.



Natural Cup.



Artificial Cup.



(b) Cross sections of Tooth showing wear.

Christian Furst, St. Joseph, Ill., says: "I have been using your celebrated Stock Food for some time and find it is the best."

Treatment.—Place in a large, well-bedded box, keep in a standing position if possible, as throwing itself may rupture the stomach; give a teaspoonful of baking soda, or perhaps better a half to a teaspoonful of carbolic acid, well diluted, may be added to an ounce and a half of laudanum and an ounce of tincture of ginger. This will allay the pain and destroy fermentation.

Cramps of the Intestines.

Cramps are due to some irritating substance in the digestive tract, as worms, undigested food, or large quantities of cold water taken when the animal is heated.

Dr. Hess' Stock Food removes intestinal worms and insures perfect digestion.

The symptoms are those of sudden pain, kicking the belly, whisking the tail, turning about the stall, and frequent attempts to lie down.

Treatment.—A full dose of laudanum with a half drachm tincture red pepper, well diluted, will seldom fail to give relief; injections of warm water (not hot) will aid in reducing the spasms. If undigested food is the cause, a physic should be given of one pint of raw linseed oil and six drachms of aloes.

Colic or Colon Indigestion.

Colic is the result of digestive disorders in the large gut,



Position in Flatulence.

cæcum and colon proper. The presence of gas in this large viscus is easily noticed by a fullness in the flanks, pains,

arched back, short breathing, dilated nostrils, pointing at the flanks, and frequent lying down. The ear applied to the flank will detect gurgling tympanitic sounds. Tapping with the tips of the fingers over flanks emits a drum-like sound.

Treatment.—The administration of four to six ounces of hyposulphite of soda with a drachm of carbolic acid, dissolved in a quart of water, given at once, is good treatment. Injections of a quart of very warm (not hot) water, to which an ounce of glycerine has been added, often works well. Use only a small quantity of water to inject, as a large amount will not be retained. A drench of an ounce or two of laudanum in a pint of water may be used to allay pain. Eserine and pilocarpine, or the trocar are resorted to when milder remedies fail, but they are safe only in the hands of a veterinary surgeon.

Constipation.

Constipation and impaction sometimes occur in the horse. Coarse food, as old and woody timothy hay and straw without sufficient water and salt, exercise, etc., are the most common causes.

Symptoms.—Light colicky pains at intervals, frequent



Position in Impaction.

passage of small quantity of dry, hard dung, backing up against the stall or partition, lying down, etc. The animal will lie flat with legs stretched out, occasionally raising his head and looking at

his flanks. This is characteristic of constipation or impaction. Pulse and appetite may remain undisturbed for a time.

Treatment.—In simple constipation a pint of raw oil, repeated if necessary, with well salted bran mashes and flax-seed meal, will bring about the desired results. Constipation and impaction can always be avoided by feeding Dr. Hess' Stock Food, which acts as a laxative and keeps the bowels regular and active. Horses that are subject to either should

be given soft food, such as bran or oats, with Dr. Hess' Stock Food as directed.

Impaction of the bowels with hard, dry matter is a common occurrence, and the symptoms are those of constipation, but more marked and persistent. A full dose of physic (aloes, one ounce; raw oil, one quart) may be given at once. The oil may be repeated; plenty of water to drink, or even forced upon it, may be of advantage. Give injections of warm water and glycerine or an ounce of aloes dissolved in a pint of warm water. Eserine sometimes does extremely well when other remedies fail, but should be used only by a veterinarian.

Mange.

Mange is a parasitic disease due to a small insect (dermatodactes equi), burrowing into the skin and depositing its eggs. The presence of the parasite is first noticed at the roots of the long hair of the tail and mane; the skin becomes rough and scaly with the formation of vesicles or pustules forming crusts, which, when removed, are penetrated by numerous hairs. The itching is very great and the skin, in long-standing cases, is fissured (cracked), rough and denuded.



Mange Mite.

Treatment.—Remove all the scales from the skin with a brush and common soft soap. This has the advantage of breaking down the burrows of the insect and allows the better application of an insect killer. Apply the following once a day for three days:

Acid carbolic, half ounce; acid sulphurous, two ounces; oil tar, one ounce; linseed oil, one quart.

In mange of the dog the carbolic acid should be omitted or reduced to a few drops.

Worms that infest the lower animals are so numerous and of such importance that we feel that the reader will be justified in giving careful attention to a short study of some of the most common varieties.

The ascarides are most common and are found in almost all lower animals, also in man. They are from four to twelve inches long, white or yellowish white, and infest the small

intestines and stomach. The female bears numerous eggs. The eggs are deposited in the alimentary canal of the host and then pass off with the feces. The eggs are not destroyed by freezing or drying, and will hatch after years of exposure to cold and wet, if taken into the stomach of another animal where the shell is digested off and the worm liberated. Stagnant pools often swarm with the eggs of these parasites. The writer was once called to attend a weanling colt suffering from colic, which grew worse until the sufferer died. Post mortem revealed contraction of the intestines, and the gut in many places was filled with worms. The number was between three and four hundred and their mass would have filled a five quart measure. The animal was watered from a shallow pool near the barnyard. These worms are very hard to destroy, and are best got rid of by a drachm of santonine given twice a day after a day's fast, followed by a physic composed of an ounce of aloes and a drachm each of gentian and ginger, made into a ball, or given in a drench of a quart of water.

Oxyuris curvula is the small worm so common in the horse. Its mode of propagation is similar to the ascaris. The immense number of eggs and their rapid development render a horse, when once infected, extremely liable to recurrence of these parasites. The length of this worm is about two inches, tapers at either end, white or yellowish white, and infests the large bowel. Dry feed, corn, and corn fodder, straw or timothy hay, with a little or no salt, favor the development of these worms, probably from the low condition which results to the animal when fed too long on dry, bulky, innutritious food. Notice the long hair, groggy, hide-bound, indifferent condition of horses fed entirely on dry feed.

Treatment.—It is useless to attempt to improve the animal without a change of diet. Corn may be given, but should not be given alone. It should be aided by bran, flax-seed meal or other laxatives.

Dr. Hess' Stock Food is especially useful in the above cases. It contains all the agents necessary to build up an animal, aid digestion, regulate the bowels, cleanse the blood,

Preston Jollez, Richwood, O., says: "I have been feeding your Scientific Stock Food for several months and have come to the conclusion that it is the best thing on the market."

gently stimulate the kidneys and liver, and you will be surprised and pleased to see its wonderful effects. Your animal will no longer be a fit habitat for these parasites.

Henry Swineford, Rows, O., says:

"After feeding Dr. Hess' Stock Food a short time, my horse passed solid pellets of worms, and his improvement was most marked. No one will regret the money expended for so excellent a preparation."



Louse.



Louse.

Lice, Worms and other Parasites.

Lice are frequently found on horses, and occasion intolerable itching. In some horses with thin skin the parasites cause so much irritation and itching that constant rubbing and biting is kept up to free themselves of the pests. The cut shows the two kinds that are most common to the horse.

Instant Louse Killer destroys these parasites, and as it is in powdered form it can be applied in cold or warm weather.

Eczema is a name given to a disease of the skin characterized by eruption, pustules and scabs. It may result from the irritation caused by lice or from improper condition of the blood.

Treatment.—If due to lice, remove the cause. If due to indigestion and deteriorated blood give a quarter of a pound of Glauber salts in a half gallon of water morning and evening for one week, or until the bowels respond. Follow with

Fowler's Solution, $\frac{3}{4}$ ii.

Tr. Nux Vomica, $\frac{3}{4}$ iv.

Give half ounce in water on each feed.

If the eruption is itchy take soda hyposulphite $\frac{3}{4}$ iv, acid carbolic $\frac{3}{4}$ i, water enough to make a quart. Wash affected parts twice a day.

Bots are the larvæ of the nit fly, that is, they are in the stage of development between the nit and the grown nit fly.

Wm. Mood, Lucknow, Ont., says: "The Instant Louse Killer is certainly the best article for destroying lice on horses that I ever was able to get."

In the Fall of the year the nit fly deposits eggs upon the jaws and the legs of the horse. From this position they are licked off by the horse or dropped into the feed trough, from whence they pass into the stomach, hatch, and are known as bots. They pass off in spring or early summer, bury themselves in the earth, soon to come forth, deposit their eggs and die. They never take any nutrition after leaving their host. They seldom do harm to the horse; they resist the action of most powerful medicines, much stronger than could be borne by the stomach of the horse. Hence, beware of remedies that will destroy bots. We have placed bots in a saturated (alcoholic) solution of corrosive sublimate, in tincture of aconite and 90 per cent. solution of carbolic acid, yet, after being removed, they seemed uninjured.



Bots attached to lining of stomach.

Treatment consists in scraping off the eggs with a sharp knife, from every point that the horse can reach with his mouth. This should be done in the Fall and your horse will be free from bots.

Heaves.

"This disease is characterized by a dry hacking cough, first seen after drinking, more aggravated after a full meal or a heavy draught of water. The nostrils dilate with each inspiration and the flanks rise with each expiration. Early in the disease a slight, frothy, watery discharge will issue from the nose, and a rattling sound be heard in the head." Feed with care, avoid dust of every kind. Horses suffering from this disease should never be permitted to engorge themselves with food and drink. Large quantities of bulky food should be avoided. Hay and grain should be made damp an hour or two before given. The following formula gives excellent results: Fluid extract of stramonium, fluid extract of lobelia, of each one ounce; Fowler's solution of arsenic, 6 ounces; mix and give a tablespoonful in half a pint of water on food, two or three times a day.

Paralysis.

Paralysis or partial or total loss of power of the hind legs frequently occurs in the horse. The disease is known as azoturia among veterinarians.

Cause.—Rich, highly nutritious food, without exercise, produces a condition favorable to the development of this disease, and exercise after a period of idleness is the exciting cause.

Symptoms.—The animal leaves the stable feeling fine and in excellent spirits, but after a short drive is noticed to hang back, become lame in one, and then in both hind legs; the limbs are moved with increasing difficulty and profuse sweats break out over the neck and shoulders, then over the entire body; the animal pants and blows, head down and ears lopped, and it is with greatest difficulty the standing position is maintained. Frequently they drop and are unable to rise, although struggling violently to regain their feet. The muscles of the hips become hard and swollen, as do the shoulders in some cases. The urine is dark and looks as if mixed with blood.

Treatment.—So much depends upon the owner or attendant's ability to recognize this disease early, that it is of the greatest importance that a careful study of the conditions and symptoms should be given. The disease is almost without danger if noticed early and the horse stopped and blanketed, and no attempt made, under any circumstances, to reach the stable. Complete rest for an hour or two will enable him to reach the stable with little or no danger. Do not forget to stop when an attack comes on, and the attack will be of little moment. A physic of an ounce of aloes in a pint of water should be given at once, a small quantity of water allowed often, and light, easily digested food will bring him out all right.

Roaring.

Roaring in the horse is a rough grating sound emitted from the larynx (top of wind pipe) during severe exercise. It is incurable and can be detected by holding a tight rein while urging the animal to a rapid gait.

Dummy.

This is the name given by horsemen to an animal suffering from slow, chronic inflammation of the brain. They are often good counterfeits (look well, but are worthless). They may be detected by a sudden rising of the head, or an attempt to back, when they will suddenly become dizzy and fall over. They will grab greedily into the oats or hay, but soon forget to chew, and will stand for a time with the mouth filled.

Treatment.—These cases are usually fat and groggy. An occasional physic, blood letting and short allowance of feed often brings about improvement.

Dropsy.

Dropsical swellings usually appear on the legs and abdomen, due to impoverished condition of the blood or to torpidity of the kidneys.

Treatment.—The vegetable bitters with the salts of iron are wonderful tonics to the digestive organs, and are liberally supplied in Dr. Hess' Stock Food. The prompt action of the kidneys, skin and bowels aid greatly in throwing off the accumulated serum. Here again the laxatives and gentle diuretic effects of this Food are well adapted to this purpose.

Coughs.

Many horses are troubled by an irritation of the larynx or bronchi from cold and other causes, and have a very annoying cough. The following will be found of the greatest value: Extract of belladonna fl., one ounce; oil of tar, three ounces. Mix. Shake and give a teaspoonful on each feed. Or the following powder will be found of use: Muriate of ammonia, two ounces; extract of licorice, two ounces; Dover's powder, one ounce and a half. Mix and make into twelve powders. Give four each day.

Crib-Biting.

This is a habit induced by disordered digestion, or irritation of the gums, dentition, etc.

Treatment.—A strap fastened snugly around the throat will prevent the animal from opening the throat or swallowing air, and mitigate the danger from flatulence. A removal of all objects that would afford him a place to fix his muzzle, an iron trough placed on the floor to feed from, will defeat him in the barn.

Constipation.

Constipation in young animals is shown by colicky pains, attempts at defecation, or passing a few dry, hard pellets. Injections of warm soap suds, or better, an ounce of glycerine in three or four ounces of water, may be thrown into the rectum. After the rectum is unloaded, castor oil, two or four ounces, may be given by the mouth. Treatment may be repeated until relief is afforded. The first milk after parturition is of great value to the offspring, from its decided laxative properties.

Cow's Milk for Colts.

When it is necessary from any cause to feed a colt upon cow's milk, water and sugar should be added, mare's milk being sweeter and containing less fat than the milk of the cow. It should be given in small quantities and often.

Mares getting Dr. Hess' Stock Food at time of parturition are aided in the production of good quantity and quality of milk.

Greedy Feeding.

Some horses eat so greedily that the food is poorly chewed, and whole grain is passed and indigestion is induced. Choke also results from rapid feeding. A few clean, round stones placed in the trough will prevent the animal from getting the feed too rapidly.

Scours.

Scours in young animals is due to some irritating substance in the bowels. Give a physic of castor oil, two to four ounces; follow with careful doses, one, two to three tablespoonfuls of white oak bark or blackberry root tea. If this does not afford relief add thirty drops of laudanum to each dose. Diminish or omit the dose when improvement begins.

J. M. Hankens, Mound City, Kan., says: "I have used your Stock Food, and find it really better than it was recommended. It is the best thing for a horse I ever tried."

Distemper.

Influenza, Strangles or Catarrhal Fever are different names applied to a chain of symptoms that have many conditions in common. All are attended to a greater or less degree by fever, dullness, loss of appetite, sore throat, discharge from the nostrils, quickened pulse and depression of strength.

Treatment.—Do not attempt to treat a horse suffering from any debilitating disease while he is tied up in a close, dark stall; good surroundings first, medicine afterward. Regulate the bowels with proper food. Dissolve a teaspoonful of saltpeter in water morning and evening. If abscesses form about the throat or under the jaws they should be hastened to point by applications of the following liniment: Linseed oil, spt. turpentine, spt. ammonia, of each one ounce, and free openings made to allow the escape of pus.

Lung Fever or Pneumonia.

Symptoms.—The symptoms of pneumonia, when not preceded by marked congestion, are often not well defined. If, however, the pulse be observed, it will show quite an increase in the number and power of the heart beats. The tongue and mouth will feel warmer than in health. The animal may or may not cough, but if cough is marked it is usually suppressed owing to the pain, which is very great when the covering of the lung (Plura) is diseased. As the disease advances it will be noticed that the horse has refused to lie down for a night or two, that his appetite is on the decline, his breathing is more rapid and the nostrils are widely dilated at each inspiration. The mucous membrane of the nostrils, which earlier was flushed and dry, now has some moisture, the ears and legs are cold, with bowels constipated and urine scanty and high colored. As the disease advances the symptoms become more marked, the pulse becomes weak and frequent, the body temperature rises, the animal shows weakness by frequent change in position, will shift from one leg to the other, refuses all food, swellings appear between and back of the front legs.

G. H. Hauser, Celina, O., says: "I have used three sacks of your Stock Food, am well pleased with the results. My horses look better than they ever did."

DR. HESS
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GOOD FOR HALF POUND PACKAGE

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For 100 hens—Get the 12-lb. package

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For 25 hens—Get the 1½-lb. package

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ONE

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DR. BISS POULTRY PANACEA

Treatment.—The first thing to be looked after when a horse is found to be suffering from pneumonia is his surroundings and clothing. Under no circumstances should an animal be kept in a poorly ventilated, low, filthy stable. Place him in a clean, well-lighted box stall, with plenty of clean, bright straw or other litter. Admit a good light, with plenty of air, but avoid drafts. The clothing should be governed by the weather. Light wool blankets should be used, and under no circumstances should he be loaded down with heavy clothing. The following may be given early in the disease: Tincture of aconite root, two drachms; ext. belladonna fl., half ounce; spirits of nitre, four ounces; add water to make eight ounces. Give one ounce every four hours. When the pulse becomes less full, the aconite should be reduced or discontinued, or the following:

During the second stage—Ammonia carb., one ounce; ext. licorice fl., one and a half ounces; tincture nux vomica, four drachms; add water to make sixteen ounces. Give two ounces every six hours.

If the temperature continues to run high without marked morning remissions, we found very gratifying results from full doses of quinine. A half ounce may be given in ball wrapped in tissue paper, or suspended in water, at once. It may be given morning and evening, but unless the temperature is very high, 106 to 107 degrees F., once in twenty-four hours will keep the temperature fairly under control.

Blisters.

Blisters or other irritating applications are of doubtful utility in the early stages of pneumonia or lung fever. If the lungs fail to clear up after the fever has gone down, iodide of ammonia, in drachm doses three times a day, well diluted, may be of advantage in absorbing any remaining exudate. It is best given after feeding. A course of tonics should be given at the same time. For this purpose nothing is better than Dr. Hess' Stock Food.

Surgery.

Surgery is that branch of the healing art which teaches the proper use of manual operations, for the preservation

E. E. Yoder, Golden Corners, O., says: "I have used your Stock Food, and always found good results."

and restoration of health. Antiseptics are agents which prevent or retard putrefaction of organic substances. Cleanliness and antiseptics are not easily observed in veterinary practice, but as far as it is possible, cleanliness about the stable, kennel or poultry house should always be observed as a means of preventing disease, as well as favoring the repair of injured tissue.

Among the many antiseptics used in veterinary practice, we will mention corrosive sublimate, carbolic acid, iodoform, benzoic acid, chloride of zinc, nitrate of silver. Corrosive sublimate and carbolic acid, from their cheapness, are most frequently employed. Four grains of corrosive sublimate to a quart of rain water, or, better, distilled water, is of sufficient strength for cleaning wounds and destroying septic material. This drug is now put up in soluble tablets, of definite weight, and they are very convenient for use. They are extremely poisonous and should be kept out of reach of little folks. Carbolic acid may be used in proportion of half ounce to an ounce of liquid acid to a quart of water. It is more irritating and less efficient than corrosive sublimate. Iodoform and benzoic acid may be applied dry to a wound to prevent or destroy septic poison.

Incised wounds are those made with a cutting instrument.

Contused wounds are those in which the tissues are crushed.

Lacerated wounds are those in which the tissues are torn.

Proud flesh results from a wound healing too rapidly. It appears as red elevations or projections from a wound, and may be overcome by the application of powdered white or blue vitriol, repeated as often as necessary.

Collar Boils (A) often form on the shoulders as large, soft tumors, usually appearing a day or more after the horse is taken from work. They are not sensitive, and if not too large may disappear without treatment, but if very large they should be opened low down and a large opening made



Proper and Improper
Stitching.

to allow free exit of the bloody serum they contain. The opening in these large, soft swellings should not be less than an inch and a half in length. After the escape of the contents, by inserting the finger, larger quantities of broken down tissue will be found, which should be removed and a quantity of powdered blue stone should be inserted to hasten the escape of injured tissue.

Shoe boils (C) are tumors of the same nature as described before. They come from the animal resting with the elbow on the shoe when lying in the stall.

Treatment consists in removing the cause and following the suggestions given under "*shoulder boil*."

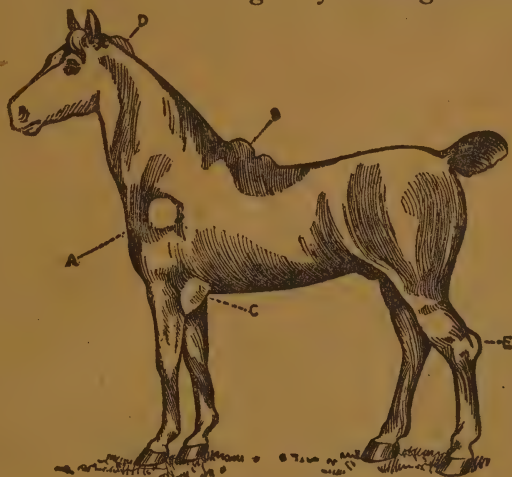
A blister, made by rubbing a drachm of red iodide of mercury well into an ounce of vaseline, applied once a week, will aid in removing any enlargement that remains after other means have been exhausted.

Capped hock (E) is due to bruise or irritation of the point of the hock. It may be the result of kicking against the stall or other injury.

The Treatment consists in removing the cause, allaying the inflammation by hot fomentations, or

the cold douche, after which apply absorbents. Tincture Iodine and Glycerine, of each two ounces, applied twice a day, will aid in reducing the enlargement, or the blister given under "*shoe boil*" will do very nicely.

The knife should not be used to reduce the swelling or to allow the escape of the serum in capped hock.



Boils and Contusions.

L. M. Davis, Gettysburg, Ohio, says: "Your preparations take all right at this place and we will continue to handle them."

Fistula (B) of the withers and *Poll evil* are at the beginning contused wounds, resulting in the first instance from rubbing against a post or tree, ill-fitting collar; rolling upon a stone or other hard body in the field will often bruise the withers and neck so that a large, soft swelling will result.

Poll Evil (D) results from striking the head against a low doorway or stable. Possibly it may be the result of a blow of a club or fork handle in the hands of the stable-man.

Treatment.—These two conditions differ only in location. Hot fomentations and blisters may absorb the serum; the use of the knife should be avoided, if possible, as these wounds, from the difficulty in complete drainage, are hard to heal.

If pus forms, its escape may be hastened by poultices and the use of the knife. In all swellings where the presence of pus is determined, its escape should be hastened by an opening into the least resisting part at the lowest point.

Punctured wounds are those made by a thrust of a pointed instrument. In relation to their extent they are the most dangerous wounds we have.

Punctures of the feet are very common in horses. They are very serious and dangerous from the frequency with which they cause lockjaw.

Treatment.—Punctured wounds should be enlarged with the knife if too small to afford drainage. In punctured wound of the foot, the hoof or sole should be cut entirely through down to the sensitive tissue and the foot placed in very warm water, to which ten grains of corrosive sublimate to each gallon has been added. Protect the wound from filth and repeat the bath.



Puncture, with
portion of sole
removed.

Lock-Jaw.

Lockjaw is a disease of the nerves that follows injuries. It is most common after punctured wounds, but frequently follows surgical operations.

The Symptoms.—The first symptom is a little stiffness in moving, and the eyes upon sudden lifting the head are retracted and the washer or haw is pushed outward, almost

covering the eye, and it is not uncommon to have the owner seek treatment for the eyes, not suspecting the real trouble. The nose extends forward, the flanks are tucked up and the tail is raised. The animal may eat fairly well for a time, but usually they champ the jaws and chew with some difficulty.



Eye in Lock-Jaw.

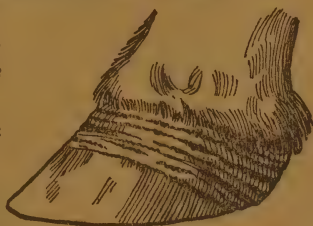
Treatment.—The patient should be placed in a dark stall away from other animals and free from excitement or noise of any kind. If the jaws are not set, a physic of eight drachms of aloes with a drachm of ginger should be given. For safety, it is best given with the balling iron. If the jaws are set no attempt should be made to give medicine by the mouth. Six to eight grains of morphine with a quarter of a grain of sulphate of atropia may be dissolved in water and injected under the skin with a syringe for that purpose. If the attack is very sudden and severe, treatment of any kind is of little value; however, if the onset is slow, by proper care many cases recover.

Founder.

Founder or laminitis is an inflammation of the feet.

Symptoms.—In acute cases the animal becomes very stiff, moves with great difficulty, evinces great pain.

Treatment.—Bleeding from the large vein of the neck or direct from the feet often brings prompt relief. A moderate physic of four to six drachms of aloes in a pint of raw linseed oil should be given, and hot poultices applied. The animal should not be put to work too soon.



Foot of a Foundered Horse.

Lymphangitis.

This is a sudden and severe inflammation, usually of the hind legs. It comes on in well fed horses after a few days' rest. It is extremely painful.

Andrew Miller, La Grange, Mo., says: "I have used your Stock Food with much success. I cannot do without it."

Treatment.—Diminish the quantity of food, give as a laxative a quart of raw oil or a ball or six drachms of aloes.

Bathe the leg with hot water frequently; walking exercise soon as the animal can move without too much pain.

Curb.

This is a swelling at the back part of the hind leg below or at the lower part of the hock joint.

Causes are slipping, hard pulling, rearing, in badly formed hocks. In recent cases it causes lameness.

Treatment.—Hot fomentations to remove heat and tenderness. A shoe high at the heel; later apply a blister of red iodide of mercury one drachm, vaseline one ounce, rub together and apply. Repeat if necessary.



Curb.

Spavin.

Spavin (bone) is a bony growth about the hock joint. It causes lameness and does not readily yield to treatment. A spavined hock can never be as good as one free from disease, although the lameness may be removed.

Treatment.—Rest and blisters. The firing iron is the surest remedy, because it can be controlled in its application, and its effects go deeper. A spavin is said to be cured or killed when the diseased bones firmly unite.



Spavined Hock.

Side Bones.

Side bones appear as hard, bony tumors at the back part of the sides of the feet. They cause lameness and constitute an unsoundness. They are found in heavy

Coleman & Co., Hartwell, O., say: "We gave your Stock Food to our horse that had worms. Now he is thriving on less feed than before."

horses almost exclusively, and are frequently the result of standing on plank floors and high calkins. They are not easily cured.

Treatment.—The treatment given under spavin applies as well to these.

Ring Bone.

Ring Bones are outgrowths of bone about the joints above the hoof. They cause lameness and constitute unsoundness. They usually yield more readily to treatment than spavins, as the joints are not so complicated.

Treatment is the same as given under spavin.

Dislocation of the Patella.

This accident shows the animal as represented in the cut. The affected limb is extended backwards and the leg cannot be bent at the hock joint.

Treatment.—Back up the horse to relax the tendon and at the same time push forward and inward over the whirlbone. When the patella reaches its proper place the horse will walk off all right. Tie the foot slightly forward by extending a rope or strap around the neck. A strong rope or strap should not be used. Apply a blister well over the patella.



Dislocation of the Patella.

Scratches.

Scratches result from mud or poisonous stable gases.

Treatment.—Poultice to remove filth and scabs; avoid washing with cold water. Oxide of zinc ointment, to which a drachm of oil of tar to the ounce has been added, may be applied twice a day. Raw linseed oil one pint, tincture of iron two ounces, applied twice a day does well.

Light laxative diet also aids in reducing the inflammation. Dr. Hess' Stock Food cleanses the blood and reduces the inflammation in horses suffering from scratches.

Grease Heel.

In this disease the discharge is very offensive. Apply with a brush carbolic acid one part, glycerine three parts; repeat once a day till the stench disappears; follow with powdered blue stone two drachms, raw linseed oil one pint; apply twice a day. The regular use of Dr. Hess' Stock Food will soon cause grease heel to disappear. It will increase the action of the bowels, cleanse the blood, reduce the swellings and expel poisonous matter from the system.

Contraction of the Heel.

Contraction of the heel results frequently from high toes and calkins, neglect in trimming the hoof, want of frog pressure, etc.



Contracted Heel.



Natural Heel.

Treatment.—If possible, remove the shoes, pare the hoof down level with the frog and turn the horse to grass for a couple of months, or if wanted for every day use, shoe with tips, only covering the front part of the foot, giving frog pressure. If full shoe is necessary let it be flat, with bar for frog pressure.

Thrush.

Thrush is a disease of the frog and sole characterized by a very fetid discharge and deep fissures at heel and sides of the frog. It usually results from filth.

Treatment.—Cleanse and pack with cotton saturated in twenty-five per cent. solution of carbolic acid. After twelve hours remove and fill the fissure with calomel or powdered blue stone.

Quarter Cracks.

Quarter cracks are cracks as shown in cut in the wall of the foot. They are best treated by removing the pressure from that part of the wall by cutting out slightly, and by cutting through the wall across the crack near the top of the wall. Firing iron will sometimes be followed by improvement.



Quarter Cracks.

Burns.

An excellent application for burns is equal parts of linseed oil and lime water.

Sprains.

Sprains of tendons (*x p*) are best treated by supporting with a neat fitting bandage and rest. A liniment composed of tincture of arnica, tincture of witchhazel, of each three ounces, spt. ammonia two ounces, water enough to make a pint; apply well to the part before placing bandage. To raise the heel and shorten the toe will relax the tendon and afford relief.



Foot of a Horse cut through.

Nettlerash.

This is a disease that appears suddenly as nodules over the body. It may appear on the eyelids and close the eyes. The nodules are tender and resemble a great number of bee stings. It is usually the result of over-feeding.

Treatment.—Give an ounce of aloes at once, limit the food supply and add to each feed for a week one ounce of sulphate of soda and a drachm of powdered gentian.

Isadore Beardsley, Seymour Lake, Mich., says: "I feed your Stock Food to my horses every Spring, and find it a great benefit."

THE EYE AND ITS DISEASES.

Moon Blindness.

This disease may implicate almost every structure of the eye. It is incurable, and will eventually destroy the eye. It recurs at intervals, but is not influenced by the moon, as is generally supposed.

Symptoms.—The onset is sudden, usually at night, and the animal is supposed to have injured the eye by a thrust of weed or spear of hay. The eye is half closed, looks dim and blue about the edge of the cornea. Pus may form in the lower part of the chamber if the iris becomes inflamed.

Treatment.—Light, laxative diet, bleeding from the vein below the eye, protect from strong light. The improvement will be noticed in a short time.

Should the eye remain cloudy, milky or bluish gray, with a feather, place a quantity of the following within the lower lid: Yellow oxide of mercury three grains, vaseline one drachm. Rub well together and use twice a day.

Inflammation.

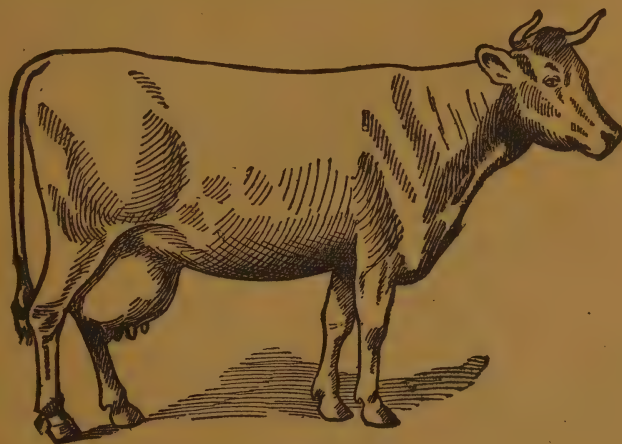
Conjunctivitis is an inflammation of the inner surface of the lids. It may also extend to the eyeball. It may be known by the red, irritated condition, watery discharge and dread of light.

Treatment.—Bathe with cold water; draw down the lower lid, and, with a dropper placed on the edge of the lid, inject several drops of the following: White vitriol grains ten, sulphate of morphine grains two, distilled water one ounce. Use several times a day. No attempt should be made to throw the medicine into the eye at a distance of several inches, as the horse will not permit it the second time.

THE COW.

Diseases and Treatment.

The value of Dr. Hess' Stock Food in raising cattle for any purpose should always be borne in mind by the farmer and stock raiser. Especially in the case of cattle raised for dairying purposes is it useful. This food keeps the cow in the best possible condition. It acts as a tonic, giving the cow an excellent appetite and helping her digest her food, so as to produce the greatest quantity of rich milk.



The Cow.

It lessens the work of churning, because the milk of cows fed upon it is richer in cream, and is therefore more readily turned into butter. It also keeps the cow in excellent tone, makes her stronger and less liable to disease and enables her to get every bit of nutriment out of her food.

John K. Stoner, Bainbridge, Pa., says: "I am using your Stock Food for my cattle and find it to be the best food for cattle I ever used, and I have used many kinds."

On this account the cow requires less food, which makes Dr. Hess' Stock Food an economical article and saves its cost many times over.

The care and manner of feeding, the kind of feed necessary to produce certain results, the utility of every by-product of the farm is fast becoming a science. Many facts well established now and of great utility would have been considered as the wildest dreams a half century ago. The dairyman now, as in other vocations, of business, succeeds best who gives his greatest attention to detail, and who prides himself in keeping abreast of the times. We believe and know that many who read this little work will discredit many of the facts it contains; but toned by the fact that the veterinary profession has risen to be an acknowledged science, in the face of a frowning public, we believe we will by merit alone win your favor and stride hand in hand to the advantage of both. Would it be egotistic if we were to assert that we can make a perfect food for your domestic animals, when we have devoted our entire time to its study? Try our goods and you will be convinced that we have given our labor and study to your advantage. By their use you will be enabled to secure larger profits and better results than can possibly be obtained in any other way, thereby gaining advantages from a small dairy well kept, which is always pleasing and profitable.

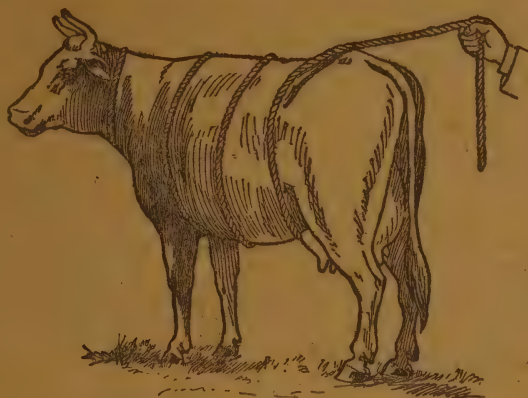
To Prevent Kicking.

Tie a rope around the cow just in front of the udder. Have the rope fit snugly, but do not draw too tight.

To Cast a Cow.

If it should be desired to throw a cow or ox it may be done without danger of injury by taking a long rope and making a loop (not a slip noose) and place it around the neck. Then pass it backward and make a

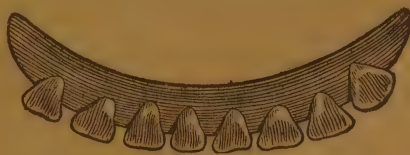
Wm. Reep, Ashland, O., says: "My cow suddenly fell off in milk, refused to eat, was constipated and began to decline very rapidly. One bag of Dr. Hess' Stock Food restored her entirely."



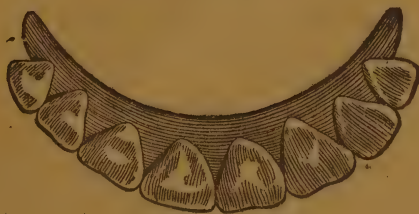
How to Cast a Cow.

turn once around the body just back of the front legs. (See cut.) Pass it under the rope as it comes from the neck; pass the rope back to near the middle of the back and make another turn around the body. Make another turn just in front

of the hind legs; carry the end of the rope back behind the cow and pull steadily, and the animal will lie down. When once down she may be secured to suit the operator.



Teeth at twelve years.



Teeth at five years.

The above cuts show the teeth of the ox at ages indicated by the figures.

Choke.

Choke is a lodgment of some foreign body in the swallow.

Treatment.—An ounce of sulphuric ether in a pint of raw linseed oil or lard will sometimes bring relief. If the drench is returned through the mouth or nose, the foreign body still

remains. The next thing is to remove it by the aid of a probang. A piece of $\frac{3}{4}$ inch rubber tubing six or seven feet long, well oiled, will answer the purpose very well. The animal should be in a stall and the head extended straight with the neck. A soft board two inches wide with a hole bored through it should be placed on its edge between the jaws. The tube can be passed through the hole and down the swallow. Care must be taken not to injure the soft parts. When the object is reached, push it down gently till it reaches the stomach. Oil may be poured through the hole in the tube to facilitate its passage to the paunch. Stiff, rough, resisting bodies as a whip, should not be used, from the danger of penetrating the oesophagus (swallow).

Inflammation of the Udder or Mammitis.

This is a condition found in deep milkers after calving. It follows over-congestion of the mamma or milk gland from over-feeding or neglect in taking the milk. It also may be a result of injury to the udder, or follow in a well-fed animal when turned to pasture.

Treatment.—The treatment should be directed to reducing the fever, allaying the pain and reducing the gland to its natural condition. A physic of Epsom salts, a pound dissolved in half a gallon of water, should be given without delay, unless the bowels be loose. Twenty-drop doses of tincture aconite, with a half ounce of sweet spirits of nitre and a half to a drachm of fluid extract of belladonna may be given every four hours. Strong food should be withdrawn if the appetite chance to be fair. The cow should be milked several times a day and the udder bathed with warm (not hot) water. Oil the inflamed gland with camphor and lard or lard in which jimson-weed leaves have been fried, or use the following: Sweet oil, three ounces; fluid extract of belladonna, one ounce; mix and apply twice a day. Continue for several days. Discontinue aconite treatment on second or third day. When the acute symptoms are over, give Dr. Hess' Stock Food to restore her lost tone. Where this treatment is followed out most cases recover entirely.

Economy does not consist in stinting your cows in their proper food, nor in "stuffing" an animal that is out of con-

dition, but first improve their condition with Dr. Hess' Stock Food and prepare them for proper assimilaion of what they eat.

Closing of Milk Duct.

The milk may be drawn by introducing a silver tube (milk siphon) for that purpose. The tube should be removed and cleansed after using. It may be necessary to use the tube several days before the duct will remain open. A solid probe, as a knitting needle, should never be used, as the milk cannot escape when it is in position and the canal closes as soon as it is withdrawn.

Fistula of the Teat.

If the canal is a result of a cut or puncture and requires immediate treatment, a teat siphon (self-retaining) should be inserted and allowed to remain, after the sides of the wound are trimmed with a sharp knife and washed with 2 per cent. solution of carbolic acid, the edges brought together and stitched with a fine carbolized violin or guitar string. It is not necessary to remove the stitches, and if well done, healing will be very rapid. The teat siphon may be removed in a day or two and only replaced at milking hour. In treating fistula not due to injury, operate when the cow is "dry."

Loss of the Cud.

Loss of the cud or absence of rumination sometimes occurs. It is not caused by escape from the mouth of the substance chewed, but from derangement of the stomach, or indigestion, whereby the organs fail to perform their functions.

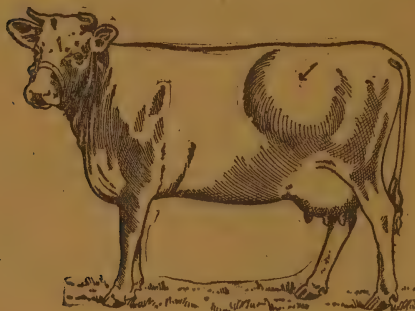
Limit the amount of grain, do not over-feed, and give Dr. Hess' Stock Food twice a day in a small amount of bran or bran and oats. This is an excellent tonic to the digestive organs and will soon restore them to their normal condition.

Hoven or Tympanitis.

Bloat, hoven or tympanitis is common in cattle. The cause is over-feeding, especially on wet or juicy tender grasses.

Symptoms.—The left side or flank becomes greatly distended, the animal emits a short grunt; she may froth and slaver and evince signs of pain.

John Harvey, Knox City, Mo., says: "Dr. Hess' Stock Food cannot be recommended too highly."



Where to Puncture for Bloat.

Treatment.—The treatment must be prompt and heroic, if necessary. Spirits of ammonia a half ounce, tincture of ginger a half ounce, water one quart. Give at once. Always drench slowly. Care should be taken not to raise the head too high, as it retards swallowing.

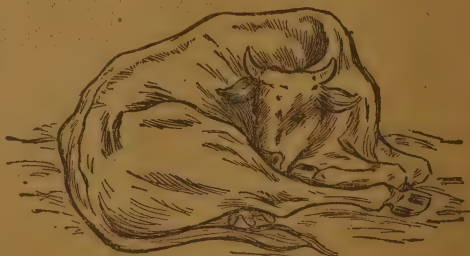
A teaspoonful of carbolic acid, with four ounces of hyposulphite of soda, may be given at one dose, if well diluted. It often has an excellent effect.

If this treatment fails, the trocar should be used to facilitate the escape of gas from the paunch. If no trocar can be had, a sharp-pointed knife may be thrust through the skin into the paunch and a quill or other hollow tube pushed in to keep the hole open. The quill may be fastened and allowed to remain for a day or two without danger, but should be removed as soon as possible. The proper place to make the opening into the paunch is on the left side at the *fullest point*, behind the last rib.

Milk Fever or Parturient Apoplexy.

This is a disease peculiar to parturition or calving. It is not a fever, as is generally supposed; the rise of temperature to 101-2 degrees F. is always favorable.

Symptoms. — The cow appears a little weak or unsteady in the hind quarters, has difficulty in rising, forgets her calf, the secretion of milk is suspended, she staggers and falls, and is unable to rise, her head is thrown



Position in Milk Fever.

to her side and she becomes unconscious to everything about her. Cows most subject to it are deep milkers, fat animals, about the third calf, after an easy, natural birth.

Treatment.—Nux vomica or strychnine has given us best results. Tincture of nux vomica in from two to four drachm doses may be placed on the tongue every two hours. If twitching of the muscles is shown, decrease the dose.

The urine should be drawn with the catheter.

The rectum should be emptied by copious injections of warm water.

A physic is dangerous to administer and almost useless, as the animal will have died or recovered before a physic could have operated.

If the temperature rises or the rectum fills with fecal matter it is a very favorable indication. Prevention is better than cure in these cases, as the disease is extremely fatal.

Light, laxative feed, with plenty of exercise, wards off attacks.

Impaction of the Paunch.

Treatment.—One and one-half pounds of Epsom salts with a half cup of common salt dissolved in two gallons of tepid water should be given at once. Large quantities of water aid in softening up the mass. The salt produces thirst and encourages the animal to drink. Here a force or spray pump can be used to advantage by placing the special nozzle in the animal's mouth and pumping very slowly, allowing time to swallow. A bottle may be used, but is apt to allow the solution to escape too rapidly or become broken. Injections should also be given. Kneading the paunch aids in softening it up. This treatment may be repeated if it fails to bring relief in from twenty-four to thirty-six hours.

Ring Worm.

Ring worm frequently affects cattle about the eyes, neck and even other parts of the body.

Treatment.—The parasite may be destroyed by a thorough application of lard and sulphur, oxide of zinc ointment, sulphurous acid, or a saturated solution of hyposulphite of soda.

All domestic animals are subject to lice. The cuts show two kinds that are most common on cattle (magnified twenty diameters).



Louse.

Treatment.—Instant Louse Killer is a sure, speedy and harmless preparation for the destruction of lice. It is put up in powdered form and in a can with perforated top ready for use. It is non-poisonous.



Louse.

Lump Jaw.

Lump jaw is the name applied by farmers and stockmen to a growth of hard nature usually situated on the lower jaw of the ox.

Treatment.—This disease has, until recently, been considered incurable, but some veterinarians claim to have a cure in iodide of potassium. If it is determined to give this drug a trial, it should be given well diluted in one to two drachm doses twice a day for some time before its effects should be looked for. Excision could not be practiced except in the earliest stage. Caustics seem to have no curative effect.



Lump Jaw.

Foul in the Feet.

This is a disease of cattle, and may assume almost any degree of severity from a simple crack or abrasion between the claws to suppuration, separation of the horn from the foot or to decay of the bone.

Treatment.—If the case is simple and unattended by pus under the hoof or horn tissue, the dirt should be removed and powdered blue stone applied. If matter has formed, the hoof should be removed sufficiently to allow its escape and a poultice should be applied. If the sore appears indolent and slow to heal, the fetid tissue may be destroyed by the application of powdered white or blue vitriol, and healthy action set up. The foot should be kept clean, the bowels should be kept active, and the general health looked after.

THE SHEEP.

Diseases and Treatment.

Dr. Hess' Stock Food is just as useful and just as profitable in raising sheep, whether for mutton or for wool, as it is for other stock.

Sheep are liable to a great many ailments, which arise from a weakened constitution. The food keeps the sheep



The Sheep.

healthy and strong and able to ward off diseases. It also helps the digestive functions, makes the sheep healthily hungry, and enables it to get more nutriment out of its food than otherwise. It also increases the growth of wool.

Grub, or Bot Fly.

Prevention and Treatment.—Wooded districts are favorable for the abode of the bot-fly. A bit of tar applied to the nose of the sheep occasionally in summer effectually wards off attacks from this tormentor. The inhalation of fumes of burning sulphur has met with considerable success in our hands when the symptoms of the disease are developed. A box into which a hole has been cut large enough to admit a sheep's head should be inverted over a vessel of burning sulphur. The head of the animal may be thrust through this hole and held for a moment or two. Care must always be taken lest your patient should suffocate.

Worms in the Lungs.

Worms in the lungs and other tissues are found to infest sheep. We will only notice one of these (*strongylus falaria*). This is a thread-like worm from one to two inches long, white or yellowish-white, and about the diameter of coarse thread. It infests the lungs, bowels and other tissues. It is most common in lambs that have to run on low lands or on fields long kept for sheep grazing.

Symptoms.—Loss of flesh, the animal becomes weak, the mucous membrane pale; the appetite usually remains good. The animal may become so debilitated as to be unable to walk.

The treatment should be the same as that suggested under stomach worms.

Prevention.—Much can be done to prevent the disease resulting from these parasites. Land that has been used for grazing for a number of years may be a source of infection and should be regarded with suspicion. Lands that overflow may become dangerous from having the eggs deposited from lands above.

Sheep kept strong, robust and hardy by Dr. Hess' Stock Food will remain strong and able to resist the action and depressing effects of these parasites in a great number of cases. When you begin to feed your sheep for market add the proper quantity of Dr. Hess' Stock Food to the regular feed and you will be very highly gratified with the results.

Stomach Worms.

Stomach worms in sheep or *strongylus contortus* are small, thread-like worms that infest the fourth stomach and upper portion of the bowels of sheep. They are extremely numerous and cause great loss in some districts.

Symptoms.—Loss of flesh, anemia, weakness, diarrhoea with great prostration of strength, and death.

Treatment.—The treatment which has been quite successful is as follows: Steep a gallon of flaxseed in three gallons of water for two hours, strain through cheese-cloth, and, while warm, use the tea as follows: Take three or four ounces of the tea, place in a bottle and add to this a tablespoonful of common gasoline, then place your thumb over the mouth of the bottle and shake vigorously; quickly pour

this down the sheep's throat. The sheep should be held in position by an attendant by placing the animal on its rump and place its nose so that it forms nearly a straight line with the back. Care should be taken that the head is not carried too far back, or danger from strangulation would result. A tablespoonful of gasoline is the proper dose for a sheep or lamb weighing 80 pounds. Lambs requiring treatment should be penned up in the evening and allowed no food until two hours after treatment, which is to be given at noon next day. They may then be turned out to grass and again brought in at night and the treatment be repeated in the same manner each day for three successive days. This treatment is almost free from danger when properly given and is quite effective. Lambs suffering from lung worms should be treated the same way. Sheep and lambs so treated should be turned into new pastures, lest they become again infested with these parasites.

Scab or Mange.

Scab or mange is a parasitic disease found in sheep.

Treatment consists in removing all those not affected to a new run. Do not move the diseased sheep and allow the others to remain, as the grounds are infected and disease will follow and you will start disease in a new locality.



Scab.

A number of sheep-dips are now on the market, but the reader may not be able to procure one from the local dealer, and for such the following will give excellent satisfaction: Dissolve a pound of arsenic in forty gallons of water by adding a pound of soda ash. Place this dip in a vessel suitable for the purpose. Keep the sheep well under the water, taking care of the eyes, nose and mouth, and allow it to remain a moment or two so that the water will reach the skin. After this allow the sheep to stand on boards that slant toward the dip-tub that the drip may flow back.

Sheep so treated should not be turned to pasture so long as any water escapes from the fleece, lest they become poisoned.

W. E. Hutchinson, Pollock, Mo., says: "I had quite a supply of stock and poultry food on hand when I ordered this, but in future we will handle none but yours."

Ticks.

The adult female tick develops an egg and retains it within her body, and forms the larva of a new being. This larva is capable of motion, has no well-defined vital organs and acquires a size nearly as large as the abdomen of the parent tick, which is capable of great dilatation, a structure necessary in the female from the peculiar manner in which she brings forth her progeny.



Sheep Tick.

When the larva or pupa is expelled it at once becomes hard and soon enlarges to a greater size than the abdomen from which it came; one end of this hard chrysalis scales off and the parasite makes its escape as a tick.

Ticks do not develop wings in adult life as the grub found in sheep or the bot of the horse, hence it does not quit its host except by accident.

These insects may grow to one-fourth of an inch in length, have brown or reddish-brown bodies. The feet are hooked and the rostrum is provided with a sucker. They have been known to live in the fleece for more than a year after shearing.

Instant Louse Killer will destroy these parasites and is harmless, lasting and devoid of disadvantages found in dips, which are inconvenient and dangerous to use in cold weather. It should be applied liberally, so that a quantity will sift well down to the skin of the animal where the tick is most frequently found. The cut represents the one louse found on the sheep.



Louse found on Sheep.

Foot Rot.

Foot Rot is a contagious disease affecting the feet of sheep.

Treatment.—Avoid pastures or runs that are contaminated. Remove all diseased or detached portion of the claw. Apply butter of antimony well to the diseased parts with a swab or feather. Corrosive sublimate, one ounce; turpentine, one pint; may be applied in the same way, but it has the disadvantage of being very poisonous and should not be carelessly permitted on pasture lands.

A. Cassell, Ashland, O., says: "For destroying sheep ticks I never tried an article so effective as Instant Louse Killer. I shall never again use a dip."

THE HOG.

Diseases and Treatment.

In the introduction it has been described how Dr. Hess' Stock Food may be used to advantage in warding off hog cholera.

Aside from this and simply for fattening a hog in the best manner and the quickest, with a less amount of food, Dr. Hess' Stock Food will save its cost many times over.

It is not simply a food—it is also a tonic.

No farmer should overlook the advantages in actual money-saving profit which will come to him from using Dr. Hess' Stock Food regularly and as prescribed.

Indigestion.

Indigestion in pigs results from faulty feeding. The food may be poor in quality, given at irregular intervals, or too great in quantity. To withhold the food for a long time and then allow it in over amounts is one of the most fruitful sources of digestive disorders.



The Hog.

Symptoms.—Loss of appetite and refusal of all kinds of food. Sometimes they will squeal for food and rear upon the fence or pen, but will not eat when food is placed within reach. The bowels may be constipated, or the evacuations may be thin. The animal seems to seek unnatural food and will eat stones, dirt, old plaster, rotten wood, in preference to corn.

Treatment.—The treatment for indigestion consists in limiting the food—that is, do not overfeed. Feed at regular intervals, and give Dr. Hess' Stock Food. We can speak with the utmost confidence of this remedy for pigs and hogs. There is no animal that comes under our observation in which this preparation has met with better results or given more universal satisfaction. It is simply a wonder in the development and growth of swine.

Wm. Lentell, Independence, Mo., says: "My hogs were taken down sick, they refused to eat; I fed Dr. Hess' Stock Food, and they soon recovered."

Pig Measles.

Cause and source of infection is now settled beyond a doubt to be from the eggs of the *Tænia Solium* of man, which is eaten by the pig. It has been as conclusively shown that the tape-worm (*Tænia Solium*) of man comes from the further development of the measle of the pig. This tape-worm found in man is a long, flat worm like a tape-measure, and is made up of joints or segments. Each segment of the worm bears male and female organs of generation, and each segment is also loaded with thousands of fertile



Tapeworm.

eggs. These joints bearing eggs become detached from the body of the worm and pass off, new joints are formed and the process is repeated as time goes on, and any number of the segments so detached will not destroy the worm so long as the head remains. The eggs contained in the joints are liberated and no amount of freezing or drying will destroy their vitality. Some of the innumerable quantity of eggs thus deposited find their way into the digestive canal of the pig through the manure pit, contaminated pools, grass to which the ova may adhere, etc. The egg is there hatched and the worm liberated to burrow through the tissue and lodge in the muscles. The habit, in the rural districts, of human excrement being deposited upon the surface of the ground or in the manure-pit, to which the pigs have access, renders it possible for one person having a tape-worm in this way to infect a whole herd of swine; and again, one of the infested herd may, when slaughtered and eaten, infect nearly all who partake of its flesh, unless the parasite is destroyed by cooking.

Prevention is much more to be relied upon, as will be seen from the foregoing article, than treatment. The history and manner of transmission of the disease as given

Mrs. Sallie Baker, Clarksville, O., says: "Our hogs were sick and dying; we fed your Stock Food, and every hog got well. We feed it now regularly."

above will aid in adopting such plans as will prevent infection. The common custom in many districts of allowing or even feeding the pigs upon every manner of filth should be discouraged. Trichinosis, another disease caused by a worm in the muscular tissue, the life history of which is the same as the *Cysticercus*, probably comes from the rat, and the flesh of other animals.

Paralysis.

Paralysis, or paresis, partial paralysis, is met with in the hog.

Symptoms are those of weakness across the back or kidneys, with inability or difficulty in walking. The hind legs appear weak and cannot be controlled by the animal, and the position shown in the cut is very common. The animal may drag itself about the pen to secure food.



Paralysis.

Treatment.—We have seen good results from the use of nerve tonics and a stimulating liniment applied with friction to the back and legs.

Ten to fifteen drops of tincture *nux vomica* may be given three times a day to a pig weighing a hundred pounds. The bowels should be kept active.

No better nerve tonic can be found for all domestic animals than Dr. Hess' Stock Food. We have personally known of a number of cures in this disease by using this excellent preparation. The pig should be kept on the ground for exercise if it has previously been kept on a hard floor.

A liniment of tincture *cantharides*, oil of turpentine and olive oil or flaxseed oil, equal parts, may be rubbed over the back.

Swine Plague or Hog Cholera.

These two diseases are caused by different bacteria, but the symptoms and general characteristics are so similar that it is possible only by the aid of the microscope to determine positively which disease or whether both diseases are affect-

W. S. Haley, Clarion, Ia., says: "The farmers have quit using the other foods and are using yours, so now I am selling this right along. There are lots of sick hogs here now and the farmers are after it every day."

ing the herd. Generally swine plague affects the lungs, pleuræ and membrane around the heart, while hog cholera is characterized by ulceration of the bowels. Hogs with swine plague frequently show symptoms of lung fever with occasional diarrhœa, while those with hog cholera frequently have diarrhœa with occasional lung complications.

The measures necessary to prevent or treat hog cholera would be even more effective in swine plague. Both diseases are produced by bacteria, which gain access to the blood. The virus of hog cholera is more difficult to destroy, more easily communicated, and more virulent in its effects than that of swine plague. The symptoms of these diseases are very similar. There is first seen signs of fever, shivering, unwillingness to move, loss of appetite, the animal is stupid and dull and hides away in the litter. In a few days diarrhœa sets in, which is persistent and exhaustive. The eyes water and later matter forms. The breathing is more frequent. The skin is often red and congested over the abdomen and inner surface of the legs. Red spots appear, due to rupture of minute vessels. This symptom is quite characteristic of hog cholera. The back becomes arched and the animal grows weak and moves with difficulty.

The fatality of hog cholera and swine plague depends upon the virulence of the contagion, and the susceptibility of the animal in each particular outbreak. If the animals are very susceptible and the contagion very virulent, the loss will be very great, even 90 to 95 per cent. The susceptibility of the animal depends much upon its condition and general health. Any influence or condition that debilitates or retards the development of the vital organs, muscular system or bony structures, must impair the resisting powers of the animal.

The food for pigs and growing hogs should consist of milk, wheat middlings, wheat or oats, crushes or peas with clover or other grass and only a limited amount of corn. Corn alone does not contain the elements necessary for perfect growth, and unless these elements are supplied in some concentrated form the animal cannot resist the poison of cholera. The virulence of the contagion can be greatly reduced by the proper use of disinfectants, which destroy

S. B. Miller, Orion, Mich., says: "Dr. Hess' Stock Food has met with great success here as a remedy for cattle, etc. I fed two hogs for 58 days; the result was a gain of 429 pounds."

the bacteria and prevent their development. Hogs that have a large range are more liable to contract cholera than those that are more closely confined, for the reason that small animals or men coming from infested districts are more apt to gain access to their run than where the animals are more closely confined.

Again, disinfectants cannot be so effectually applied over large areas as where the grounds are limited. It is advisable when there is reason to fear the disease to keep the hogs in small inclosures, which should be kept as clean and dry as possible, and disinfect thoroughly at least once a week. New herds brought on the farm should be kept by themselves for five or six weeks and disinfectants used, to avoid risk of contaminating the home herd. Hogs that have been shipped in cars previously used for this purpose, or have had access to grounds over which hogs have been shipped, should be regarded with suspicion.

Can hog cholera be cured? If so what is the remedy? We know of no positive cure for every case. With all contagious diseases, prevention is more satisfactory in every way than medical treatment. Every swine grower should use the utmost precaution to prevent the introduction of such plagues into his herd. Feed your hogs Dr. Hess' Stock Food, disinfect with Instant Louse Killer, and if your hogs contract hog cholera and die, we will refund every cent you have paid us.

Thumps.

Thumps is a disease found usually in young pigs. It is probably caused from spasm of the diaphragm. It results from close confinement and over-feeding.

Piles.

Piles are very frequently seen in pigs closely confined and fed largely on dry feed. It results from constipation or low, weak circulation, due to general debility. The presence of hard fecal matter in the rectum retards the return of blood circulating in the walls of this part of the intestine. The effort necessary to evacuate the bowels also favors the dilata-

John S. Bush, Wethers Mill, Mo., says: "I feed Dr. Hess' Stock Food, and like it very much. Since using it I have not lost a hog from any disease."

tion of the walls of the veins; this continues until the mucous membrane or even part of the bowel itself may protrude.

Treatment.—The treatment should be directed to removing the cause, and as this is most frequently constipation, laxatives should be given. Soft feed containing some flax-seed meal or Glauber salts may be added. Dr. Hess' Stock Food contains just the proper amount of laxatives for these cases, and in addition this food contains the best nerve tonics necessary to tone up the loose, dilated and flabby walls of the bowel, and contribute directly to the cure of the disease.

The following application will be of advantage in reducing the tumor:

Tannic Acid, 3ss.
Powd. Opium, gr. x.
Vaseline, 3i.

Apply two or three times a day.

Rheumatism.

Rheumatism is not uncommon in hogs. The disease may be known by the difficulty in moving and the disposition to lie in the litter. It results from exposure, dampness and cold.

Symptoms.—In severe acute cases the joints swell and are extremely painful, the patient is feverish and the appetite is impaired; the swellings frequently shift from one joint to another. This is characteristic of acute rheumatism of the joints.

Treatment.—Provide shelter free from moisture and keep the litter clean and dry. In early stages give one to two ounces of Epsom salts dissolved in a little milk or water. If this does not cause copious action of the bowels, repeat in 15 hours. Two drops of croton oil in a tablespoonful of sweet oil may be given instead of the salts. After this give 10 drops of oil of wintergreen in a little sweet oil or raw linseed oil three times a day. In cases less acute 10 grains of iodine of potash should be given three times a day, dissolved in a little water. A drachm of powdered cantharides

Larkin Edwards, Knox City, Mo., says: "One package of Dr. Hess' Stock Food made 200 lbs. of pork, and also saved me a great deal of corn."

rubbed up with four drachms of lard does extremely well as an application to the joints where the swelling is persistent. Dr. Hess' Stock Food is also very valuable in preventing this disease, and is a good treatment where laxatives and tonics are required.

Sore Throat or Laryngitis.

Sore throat or laryngitis, which is quite common among pigs, is characterized by cough, difficulty in swallowing and rough breathing. The breathing sometimes becomes quite laborious and the animal will make a slight, grating noise at each inspiration. The air passages may become closed so as to cause death. The causes of this disease can usually be attributed to sudden changes from heat to cold, ill-ventilated stables, lying in cold, wet stalls, or gaining access to pools while overheated.

Treatment.—Give two ounces of castor oil; follow this by giving 10 grains of chlorate of potash and 3 to 5 drops of fluid extract of belladonna dissolved in water three times a day. If the breathing is very difficult, give four grains of tartar emetic and six grains of ipecac in a little gruel. Repeat in half an hour if vomiting does not take place. If the cough is very bad give 10 to 15 drops of laudanum or a teaspoonful of paregoric three times a day.

Chronic Cough.

Chronic cough may arise from constipation, indigestion, worms, congestion of the liver or irritation of the throat. A chronic cough arising from the above causes is best treated by a regular course of Dr. Hess' Stock Food. This preparation will overcome constipation, improve the digestion, remove intestinal worms and relieve congestion of the liver.



Hog Louse.

Lice.

Lice that infest pigs are destroyed by Instant Louse Killer.

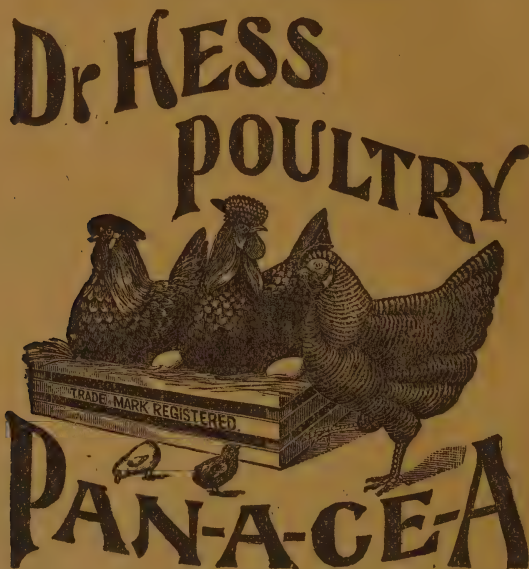
J. W. Stewart, Argos, Ind., says: "Dr. Hess' Stock Food is invaluable for hogs and cattle."

POULTRY.

Diseases and Treatment.

There is a great deal of profit in raising poultry if it is done rightly. This means a constant and regular use of some article which will act as a tonic and at the same time cure or help the cure of a number of the ailments to which poultry are liable.

Such an article is Dr. Hess' Poultry Pan-a-ce-a. It is an invaluable aid to every poultry raiser.



Dr. Hess' Poultry Pan-a-ce-a will be found of advantage in all kinds of poultry at all ages. In its preparation we have taken great care to unite only the best remedies whose medical properties are well established, and also to select the best agent representing the class to which

The St. Louis Fanciers' Association, St. Louis, Mo., say: "During our show we used your Poultry Pan-a-ce-a and Instant Louse Killer with satisfactory results, and can truthfully recommend them to all breeders of poultry."

it belongs. For digestive tonics we have used drugs that are without question at the head of the list. Our blood tonic is not *probably* the best, but *absolutely* the best known to medicine.

In addition to the Poultry Pan-a-ce-a it will be found useful to keep on hand a plentiful supply of Instant Louse Killer.

Poultry is more or less subject to parasites of all kinds. No remedy at once so harmless and so effective as Instant Louse Killer has ever been found. It is in the form of a powder put up in a can with a perforated top ready for use. Dust your fowls with it, use it in the nests and dust bath, and they will be free from insect pests of all kinds.

[The cut represents the digestive organs of the domestic fowl (2) Crop, a dilated portion of the œsophagus, for retaining and softening the food. (3) Neck. (4) Liver. (5) Gizzard. (6) Cæca. (7) Loop of duodenum. (8) Proventriculus, a dilated portion of the œsophagus containing true digestive glands. (9) Lobe of liver. (10) Lungs. (11) Ovary.



Stomach of a Fowl.

(12) Oviduct of canal for conveying egg to cloaca. (13) Ureter, carrying excretion from kidney to cloaca. (14) Cloaca, into which open the ureters, the bowel and the oviduct (12), and also in which are contained the organs of generation of the male bird.]

"The London Poultry and Pet Stock Association, London, Ont., say: "Your Poultry Pan-a-ce-a is perfectly reliable for cold roup and indigestion. We find your Instant Louse Killer very effective."

Crop Bound.

This is a disease that arises from taking too much or too coarse food into the crop. It is frequently the result of an abnormal appetite, from deranged digestion, or from lack of variety in the food supply.

Treatment.—As the crop has little to do in the process of digestion except to hold and moisten the food, it should not be overloaded. The desire for unnatural food should be corrected by giving a variety, and a good supply of grit. The digestive tonics, as gentian, columbo, etc., are liberally supplied in Dr. Hess' Poultry Pan-a-ce-a, also the zymocides that will prevent putrefaction and fermentation of the food and the evolution of gas. This preparation will be found of great value in fowls prone to indigestion.

Oil or tepid water should be poured down the throat and the mass in the crop kneaded gently to aid in breaking it up. A small quantity of soda sulphite dissolved in the water will prevent fermentation of the food in the crop. If the bird is valuable and the mass cannot be moved, it may be necessary to cut through and remove the contents. The cut should be high as possible, so that food taken after, which should be limited for a while, will not escape.

Indigestion.

The trouble is due to irregular feeding, or being fed on one kind of grain too long, dirt, and sour feed with a poor supply of grit. The gizzard is the grinding mill of fowls, and instinct has taught them to gather and swallow small stones to aid in grinding the food.

Treatment.—Feed regularly a moderate amount of good, clean grain, give a variety such as cornmeal, wheat middlings, oatmeal and a small amount of lean meat. Mix together and make damp, but never soft or sloppy. To this add Dr. Hess' Poultry Pan-a-ce-a as directed, and give for the morning feed. The evening feed should consist of whole grain, and should be thrown among leaves, chaff, straw or other litter to compel them to exercise to obtain it. Two feeds a day are enough for old fowls. Always provide the birds with a good supply of sharp grit.

Diarrhoea.

Diarrhoea in fowls is a symptom of intestinal worms, cholera, indigestion, lice, congestion of the liver, over-feeding, and possibly some other conditions.

A feed of cornmeal and middlings, or oatmeal, made damp with a tea made from boiling white oak bark, or blackberry roots, will usually allay the trouble. Camphor water may be used the same way. A drachm of powdered nutgalls may be given to fifty chickens in the feed. A table spoonful of Douglas' mixture should be added to the drinking water for 25 fowls, every day or every other day. Douglas' mixture is made by adding one pound of copperas to two gallons of water. After this is dissolved add one ounce of sulphuric acid. Mix, and when this settles pour off the liquid and it is ready for use. It should be made in a wooden or earthen vessel. Dr. Hess' Poultry Pan-a-ce-a is also extremely valuable in overcoming diarrhoea, especially when it arises from indigestion.

Scabies.

Scabies of the legs occurs as a parasitic disease in the fowl, and is commonly known as scaly legs.



Treatment.—Oils and fats are not entirely without danger when applied to poultry, especially to young fowls. The feet should be cleaned as well as possible, and the scabs removed after soaking in tepid water. When dry apply balsam of peru and repeat in a day or two. The run should be sprinkled over with Instant Louse Killer. The disease is not difficult to cure, and is not so apt to spread as some other forms of itch.

Depluming.

Depluming, scabies, or a form of itch, is found in poultry that selects the body of the fowl for its abode. It does

U. R. Fishel, President, American White Plymouth Rock Club, Hope, Ind., says: "You cannot recommend it too highly and it will do all you claim for it. No poultry raiser should be without it."

not burrow into the skin, but lives upon the feathers and epidermis.

Treatment.—As this is an extremely contagious disease, the healthy fowls should be placed in a separate run and Instant Louse Killer dusted into the feathers, if any remain, on the diseased bird. Dust the pen, roost and everything thoroughly. Treat new cases at once, if any arise. Ointments or balsams, as that of peru, are effectual, but they are very difficult to apply. Instant Louse Killer can be dusted into the feathers when the disease first appears.



Scabies.

Favus.

Favus is a parasitic disease found in fowls. The favus generally begins on the comb, crest or wattles—shown by gray or white, round or irregular spots, separated at first, but extend, multiply and become confluent or joined together, forming a thin, whitish covering over the diseased surface. The crusts gradually become thicker, and in a few weeks form white dandruff-like scales; beneath these scales the skin looks excoriated and tender. From those parts first affected, and not covered with feathers, the disease spreads to the neck and other parts of the body and the feathers drop out. The cut shows a fowl suffering from favus.



Favus.

Treatment.—Some writers recommend the application of two to ten per cent. solution of corrosive sublimate but as this preparation is extremely poisonous, we would prefer other applications. A ten per cent. solution of nitrate of silver will destroy the parasite, but it turns everything black and looks bad. It should be applied with a brush. A very

Charles Bryant, Brighton, Mich., says: "Never have I used anything equal to your Poultry Pan-a-c-e-a. It is positively the only thing that will cure Gapes, Cholera and Roup. I have also found it an excellent egg producer."

sure and perfectly harmless remedy is a saturated solution of sulphite or hyposulphite of soda applied well over the parts; this will destroy the fungi and be free from danger of poison.

Gapes.

Gapes is a parasitic disease affecting young fowls. The worm which causes the disease is developed from the egg of its own kind, which contains the embryo of this parasite.

This cut represents the gape-worms attached to the inner surface of the windpipe. The older methods of removing the worms with a small wire, twisted horse-hair or denuded timothy head or by dropping some liquid, supposed to cause the worm to relinquish its hold, into the trachea is not only attended with danger even in the hands of a skilled operator, but is too tedious and unsatisfactory to receive general favor. Dr. Hess' Poultry Pan-a-ce-a is a safe,



Gapes.

convenient and thoroughly effective remedy. It never fails to give most excellent results when given to young fowls early and regularly. If Dr. Hess' Poultry Pan-a-ce-a is given regularly once a day after the fowls are one week old there will be no loss from gapes. Its action is through the blood, from whence the worm gains its nutrition by drawing from the delicate lining of the trachea. The question might arise how this could be when the Pan-a-ce-a is taken with the food and passes directly to the crop, not reaching the windpipe or worm at all.

This result is no more difficult to explain than those of a deranged brain resulting from taking alcohol into the stomach, or from dilatation of the pupils from a full dose of belladonna or the bowels of the suckling offspring responding to a physic administered to the mother.

Feather Eating.

Feather eating is a vice found most frequently in fowls closely housed.

Treatment.—Remove the offending bird and watch for new cases. Aloes made into a paste and applied to the feath-

S. R. Fred, Middleburg, Va., says: "I was losing 15 to 20 fowls per day with roup. A friend sent me a package of your Poultry Pan-a-ce-a, and it completely cured them."

ers of the neck will sometimes disgust the offender. Better to chop the head off unless the bird is especially valuable.

Cholera.

Cholera in fowls is an acute infectious disease, endemic or epidemic, characterized by copious watery dejections and great prostration in strength.

Symptoms.—The first indication of disease may be shown by the bird appearing slow and indifferent, remaining alone, half asleep, with the feathers of the neck standing up and the wings drooping. As the disease advances these symptoms are more marked, great weakness supervenes; the eyes are closed and the head resting upon the ground, motion difficult and unsteady. The head is pale or bluish white; the excretions, which in health are white, are tinged with yellow. This symptom of yellowishness of the urates (that part of the excrement which is thrown off by the kidneys) is peculiar to this disease.

Causes.—This disease may arise spontaneously by filth and poor ventilation, over-crowding or other debilitating causes which render the fowls very susceptible or less able to resist the poisonous germs of infection, but by far the most frequent cause is by contagion or by coming in contact or taking the poison directly into the body. It has been quite conclusively demonstrated that the germs of cholera are not volatile, and birds close to an infected pen will remain healthy for months if no solid substance to which the diseased germs can adhere are conveyed to the healthy fowls.

Prevention and Cure.—Heat destroys the cholera germ. If the food or drink be boiled or heated to boiling point, and fed from vessels cleansed with boiling water, it will remove this source of infection. The birds should be fed through a slatted partition, as their feet may be a source of infection. All healthy birds should be removed from the infected pen. (Do not remove sick bird, as the pen is already infected.) Remove all the droppings or other filth. Sprinkle every part of the pen with a solution of a pound of carbolic acid to twelve gallons of hot water, or a pound of sulphuric acid

W. L. Berry, New Castle, Ohio, says: "Your Pan-a-cc-a gives entire satisfaction. My petress say it will cure cholera every time."

to twenty-five gallons of water. Sprinkle everything and do it well. Repeat every other day.

Give the sick birds Dr. Hess' Poultry Pan-a-ce-a regularly as directed. Give those not affected the Pan-a-ce-a as a preventive and your fowls will soon be free from any trace of disease.

Simple Catarrh.

This is a simple inflammation of the mucous membranes of the nose, eyes and the ducts leading from the eyes to nostrils. The mouth, larynx, pharynx and upper portions of the trachea (windpipe) may also be the seat of catarrh. In catarrh the discharge is slight, watery and does not emit much, if any, odor. Catarrh arises from exposure to cold, and wet, to filthy runs, etc.

The Treatment of catarrh is simple and consists first in removing the cause, such as exposure to cold draughts, wet run, want of cleanliness, etc., giving the birds a clean, light, dry run, treating them with tonics in warm food. As a tonic with the morning feed nothing equals Dr. Hess' Poultry Pan-a-ce-a. In fact, this remedy is all that is required, where care of the flock as suggested above has been observed. When the discharge from the inflamed mucous membrane becomes thick, purulent and fetid, the disease is then known as

Roup.

Roup results from close air, extreme variations in temperature between day and night, or sudden changes as cold waves, damp houses, draughts of cold air striking the birds, especially while on the roost, etc.; associating with birds already affected, improper food and filthy water, over-crowding, filth or other influences that tend to lower the vitality of the fowl.

The introduction of a diseased bird or one that has apparently recovered from disease will often be the cause of many new cases in the run. Purulent discharges dropping from the nostrils of a diseased bird into the feeding trough or drinking vessel may be the direct cause of canker of the mouth and throat.

Mr. J. B. Nelson, Strawberry Point, Ia., says: "The Pan-a-ce-a has done wonderful things for us."

Birds that have suffered from a severe attack of roup should not be kept for breeding stock, as their chicks are almost sure to be delicate and unthrifty and develop roup upon the slightest exposure.

Symptoms.—The first symptoms of roup may be a slight drowsiness, diminished appetite, redness of the mucous membranes with a watery discharge from the nostrils, which soon becomes thick and yellow in color, bubbles appear in the corners of the eyes and the nasal discharge dries around the orifices, closing them. The bird will sneeze and shake its head in its effort to dislodge the offending matter. The eyes become swollen and cheesy masses appear beneath the lids, cankerous sores appear in the mouth and throat; if the mucous membrane of the throat becomes much inflamed the breathing becomes difficult and the bird makes a wheezing noise, especially while on the roost. If the swelling is very bad or the nostrils become pasted shut, the bird will keep the mouth open to obtain air. Nodules often form upon the comb, about the eyes or even upon the tongue. These large warty growths entirely close the eyes, or when situated upon the tongue prevent the bird from taking food. In severe cases of roup the discharge becomes yellow and very offensive, the whole head seems to be filled with pus of the most offensive character, the bird is unable to eat, becomes weak and soon dies.

Treatment.—The fowls should be given the very best surroundings before any treatment is attempted. It is useless to make local applications or give remedies internally, so long as the birds are housed in a damp run, are exposed to draughts of cold air, or compelled to eat food or drink water that has received the discharges from diseased birds, or while the birds are over-crowded or kept in a filthy place. Provide a clean, dry, well-lighted place for diseased birds. Disinfect the run by using Instant Louse Killer freely. This destroys the poison of disease, and, being in powder form, does not cause the dampness so objectionable in liquid disinfectants. Scald out the drinking vessels and feeding troughs every day.

For mild cases good care with Dr. Hess' Poultry Pan-a-ce-a in the morning feed will be all that is necessary to effect

a cure. The Pan-a-ce-a is an excellent tonic, besides having special properties which counteract the poison of roup. It should be given regularly to all birds affected with this disease. As a local application equal parts of peroxide of hydrogen and water applied with a soft brush or injected into the nostrils with a small syringe is good treatment; an ounce of creolin dissolved in four ounces of water may be used the same way with good results. A drachm of powdered blue stone dissolved in two ounces of water makes a splendid application for indolent canker sores. It should be applied with a camel's hair brush to the sores only. If diluted with eight times the amount of water it makes a good injection for the nostrils, a small amount can also be dropped into the eye if the discharge is profuse.

Nitrate of silver, thirty grains to the ounce of water, is a good remedy to apply to the unhealthy or indolent cankers. This is a very strong solution and should be applied only to the canker. Monsel's solution is also a splendid application for canker sores or unhealthy growths or ulcers about the comb. Two or three grains of sulphate of zinc dissolved in an ounce of water is excellent for those cases in which the eyes are badly swollen and the discharge is profuse. A drop or two should be put into the eye twice a day with a dropper.

For severe cases, characterized by enlarged head, canker in the mouth, very disagreeable discharge from the eyes and nostrils, the following treatment is probably the best and most satisfactory that can be employed. Take a bucket nearly full of warm water, pour on top of the water three or four ounces of kerosene oil. The oil will remain on top of the water. Take the diseased bird by the head and legs and dip the head into the oil so that the eyes are covered, hold a few seconds, take the head and wipe dry; do not be too slow in taking out the bird or in wiping the head dry or the feathers will come out. It is seldom necessary to repeat the application, and where good care is observed with tonics such as Dr. Hess' Poultry Pan-a-ce-a, given internally, almost every bird so treated will make a good recovery.

John Pletsch, Shakespeare, Ont., says: "I have used your Poultry Pan-a-ce-a and Instant Louse Killer and find them both first-class articles; they will do all that is claimed for them."

Lice.

There is little doubt but that the many cases of so-called cholera among fowls is not cholera at all, but some other and unrecognized disease, or their real trouble may be found in not a few cases directly traceable to lice.

A case in point is that of a farmer who insisted that his fowls died of cholera, and that cholera was always caused by or accompanied by lice, and that a line of treatment directed against lice always brought great improvement in his cholera patients. No doubt the myriads of lice that infested



his birds were the true cause of the trouble. When your chicks or turkeys become weak, sick and debilitated, refuse to eat, sit around with eyes half closed, feathers ruffled, wings drooping, or they have diarrhœa, and keep up a plaintive cry, look out for the large, gray head-lice, a single one of which will kill a chick or young turkey. Lice will kill fowls almost as rapidly and surely as cholera, and while we do not recommend our Poultry Pan-a-ce-a as a preventive or a destroyer of these parasites, it will be found of the greatest utility in toning up the fowls, while other means may be directed to the destruction of lice.

Instant Louse Killer will destroy these pests at once, and is lasting, cheap and easily applied. The small mite which

A Warrington, Toronto, Ont., says: "During the summer of 1897 I used your *Instant Louse Killer* with grand results. I cannot be persuaded to take any other than *Instant Louse Killer* if I can get it. I have to go four miles for it."

infests the roosts and pen and visits the birds at night is not much less annoying to the fowls, although less dangerous to life. They leave the bird to hide in the cracks or filth of the pen and attack the fowl when opportunity affords. The large gray louse never leaves the fowl except by accident.

There are many varieties of different lice that infest the domestic fowls. The rapid development and multiplication of these insects is most wonderful, thousands developing from a single pair in the course of a few weeks. Filth, heat and dry weather favor the development and propagation of these parasites. No disease of domestic fowls is so persistent, destructive and difficult to completely remove as phthiriasis (lousiness). It is only by persistent efforts and continued warfare against these parasites that they can be kept in subjection. Instant Louse Killer is the very best article so far found to destroy these pests, and its effects are largely due to its power to cleanse and destroy putrefactive matter. It is non-poisonous to higher forms of animal life, but speedily destroys low animal organisms.

Do lice cause gapes? is a question that has received considerable discussion, and it is not uncommon to meet a person who believes that gapes in fowls are directly due to lice, and without lice the disease known as gapes would be unknown.

If this be true, then the gape worm found in the trachea (wind pipe) of the fowl must bear some relation to lice; that is, the gape worm found in pairs must result from lice themselves or from the eggs or nits of lice, or must be in process of development from the nit of the louse, to the adult being, much the same as the maggot is the intermediate stage between the nit and the blow-fly, or the tadpole is to the frog egg and the frog. But we find that this is not the case with the gape worm and that the worms are adult and sexually mature and that they transmit their peculiarities to their offspring.

The louse is developed directly from the nit, so with the gape worm, except that the eggs of the latter are hatched with possibly a few exceptions within the body of the parent worm. The general prevalence of this disease during wet

Thomas A. Duff, Toronto, Ont., says: "I have tried your 'Instant Louse Killer' and can say that it does its work quickly, effectually and well, and precisely as represented."

weather can be attributed to the fact that earth worms bearing the eggs, or young gape worm, which they have eaten, or even the gape worms themselves, frequent the surface of the ground, where they are picked up by the young fowl and eventually cause the disease.

Why this parasite should select the windpipe as a special location or exactly how it reaches the inside of this tube has not been fully determined, but it is a fact beyond dispute that the worms are firmly attached to the mucous membrane of the trachea by their sucker-shaped mouths and from which they no doubt gain their nutrition. So firmly are they attached that it requires quite a little force to dislodge them.

Apoplexy.

This disease occurs among fowls that are very fat. The heavier breeds are most prone to suffer. The attack is sudden, no previous illness being shown. Fowls suffering from apoplexy often drop from the perch dead, or from some sudden exertion drop over. The danger from this disease may be overcome by cutting off the food-supply and giving plenty of exercise.

Leg Weakness.

Leg weakness is the name commonly applied to a condition in fowls, characterized by an irregular, weak, uncertain motion when the bird attempts to move. All degrees and stages of disease may occur, even from a slight irregularity or uncertainty in the step when the bird attempts to walk, to total inability to progress, and even to stand is a feat beyond the strength of the bird. Sometimes the fowl will attempt to walk, but suddenly tilt forward or backward and extend its wings to aid in preserving its equilibrium. The appetite very often remains good, and the fowl will greedily swallow any food that happens to come within its reach, or will even make an effort to reach food in sight.

Cause.—The cause of this disease is no doubt largely due to improper food or to the want of proper digestion and assimilation of the food taken. Young birds of the larger and heavier breeds, whose growth is very rapid, are most

Mrs. James Detheredge, Williamsfield, Ill., says: "My chickens were sick and dying, but after the first dose of your Pan-a-ce-a I never lost one, and they are now well and hearty."

frequently affected, but this rule is not without exceptions.

It is an admitted fact by physiologists that certain kinds of food go to repair the tissue and the formation of muscular fibre, while another class supplies heat for the body and the formation of fat. If these foods are not each supplied to meet the special requirements the bird must suffer to that extent. During the growth of bone, muscular tissue and feathers, a great quantity of food rich in nitrogen and the mineral salts so necessary for the growth of bone is required. In the mammalia, or those animals which suckle their young, no food is so nutritious or so well adapted to the growth of the offspring as the milk of the dam. Cow's milk is found to be rich in the salts of potash, soda, calcium, iron and others, also to contain casein, albumin and other nitrogenous bodies which go to the construction of muscular tissue. Sugars, starches and fats, when fed alone or to the exclusion of such articles as lean meat, milk, blood, eggs, beans and other nitrogenous materials, form too much fat without material for muscle and bone, and this, no doubt, is the cause in many cases of the disease under discussion. A great variety of food should be given, and raw, lean meat and milk should not be overlooked. Dr. Hess' Poultry Pan-a-ce-a will be of the greatest benefit in these cases, as it contains those salts of iron, potassium, soda and the bitter tonics, in the most easily digested form and will supply the salts so necessary for the rapid and well balanced growth of the young fowl, yet so frequently absent or supplied in very much too small quantities in the food. If you will give this preparation a trial you will find that it is all that is claimed for it.

Worms in the Intestines of Fowls.

There are no less than ten different kinds of tape-worms described and found in the domestic fowl. Besides these there are numerous round worms that are of no importance, as far as they are associated with disease. The most common tape-worm of the fowl is from one to ten inches long, or even longer, and one twenty-fifth to one-tenth of an inch wide. They are segmented or jointed, the same as those found in man. They are all provided with small hooklets

J. Blackadore, Canton, Ill., says. "The Pan-a-ce-a and Louse Killer are giving excellent satisfaction."

by which they fasten to the lining of the bowels. They have no alimentary canal or passage-way for food, but each joint is provided with *sexual* organs and loaded with eggs; these joints become detached from the head of the worm and may be found in the droppings of the fowl.

Fowls that bear numerous tape-worms lose their appetite, become poor in flesh, dull and feeble, wander off alone, and sit with the head under the wing with the feathers standing out. Diarrhoea, with dizziness and stiffness of the legs have been noticed.

Treatment.—The worms may be removed by giving the fowls a teaspoonful of powdered pomegranate root, for every fifty chickens, in their food. Or a drachm of powd. Areca nut should be given in the food, for thirty fowls. Powdered male fern may be given in the same dose and manner as Areca nut. The drug that is selected should be given after a period of ten hours' fasting. The following morning a soft feed should be given, and a few ounces of glauher salts be dissolved in the water used to mix the food.

Canker.

Canker may develop from a cold. They appear as indolent sores about the mouth and mucous membrane.

Treatment.—If white, cheesy substances are present remove carefully and apply, with a swab or brush, Monsel's Solution. A few applications will overcome the disease.

Moulting.

At the moulting season poultry requires extra care. The requirements necessary for the growth of feathers tax the digestive and assimilative powers to their utmost. Foods rich in nitrogenous materials are especially useful, and Dr. Hess' Poultry Pan-a-ce-a will be of very great advantage. Its use should begin early and continue regularly through the season.

A. M. Sparrow, Williamsfield, Ill., says: "I have used Pan-a-ce-a with fine results in Caper and Roup. It is a great egg producer and I heartily recommend it to all poultry raisers."

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